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FRACTURES OF THE NECK OF THE FEMUR *

WILLIS C. CAMPBELL, M.D.

MEMPHIS, TENN.

The principles and routine treatment of fractures of the neck of the femur are so well understood and intelligently carried out by members of this section that it was with much hesitancy that I selected the subject for this occasion; but as the statement has been repeatedly made, during the past year, that bony union does not occur, or that bony union rarely occurs, which is contrary to the opinion of observers worthy of consideration, a careful investigation was instituted to determine the process of repair in central or intracapsular fractures of the neck of the femur.

In 1919, in an article [1] on fractures of the neck of the femur, in which 116 cases were analyzed, I stated, concerning twenty-nine central fractures, that twenty-four gave excellent functional results, by which is meant that the patient was able to walk without support, pain or discomfort, and with every evidence of bony union; four failed, and in one the result was unknown. A slight limp persisted in a majority, though quite a number walked perfectly. A roentgen-ray study was made in every case, when possible, for at least one year.

In this series, which was begun in 1910, we depended, in many of the cases, on the physical findings, which could not be corroborated by roentgenograms on account of the difficulty to induce elderly persons to return for roentgen-ray observations, after a good functional result had been obtained. From a practical point of view, the deductions were obviously correct.

So far as can be found, no more definite data have been published; consequently, it was decided to make a clinical and roentgen-ray study of as many cases as possible one or more years after the occurrence of the fracture to determine and to demonstrate the nature of union acquired.

In order that there may be a complete conception of the subject, I shall first discuss fractures occurring in this region:

1. Fractures of the trochanter, intertrochanteric and subtrochanteric probably unite more readily than in any other portion of the skeletal system, as there is obliquity of the fragments, with comminution, presenting large areas of raw bony surfaces for the production of callus.

2. Impacted fractures, though more frequently intracapsular or central, may unite by rest in bed or any simple method of fixation. Diagnosis is often impossible without the roentgen ray, as function may not be materially impaired. Many patients will give a history of walking after the injury, and several have walked into the office without support, thinking that some trivial muscle strain existed. It is also probable that weight bearing may bring about dissolution with separation of fragments, producing a complete central or intracapsular fracture with permanent disability, as has been seen in several medicolegal cases, in which the fracture was not discovered. Such unpleasant and disastrous results could be avoided by roentgenograms of all hip injuries in those past middle life.

3. Capital fractures (of the head proper) are of rare occurrence, but they may cause serious mechanical impairment of joint function, requiring radical operative procedures.

4. Central or intracapsular fractures are more frequent and of more serious consequence, as it is well known that nonunion occurs more often than in any other portion of the osseous system. Consequently, it is most important that the exact location be known, not alone from the standpoint of prognosis, but also from that of accurate statistics, for one is not infrequently confronted with claims of excellent results by methods known to be unsuccessful. In all probability, such cases are impacted or trochanteric and not complete fractures of the anatomic neck, and may give good functional results by any splint that restores alinement. It is also possible to have good function without union if the distal fragment is within the acetabulum, as solid support is given the upper extremity of the femur with gradual absorption of the head.

In 1919, as mentioned above, there were reported 116 fractures in the region of the neck of the femur; since then we have had 111, making a total of 227. Of these, sixty-seven were ununited central fractures of several months' or years' duration, not one nonunion being found in the region of the trochanter. These cases had been treated by various inefficient methods, as Buck's extension and Hodgen's splint, and are mentioned, as it is desired to discuss the possibility of bony union after atrophic changes with a permanent status of nonunion existing.

The remaining 160 were fresh fractures, having been seen immediately or within a few days after the occurrence of the injury, and were thus distributed: complete central or intracapsular, seventy-five; impacted, nineteen; trochanteric, fifty-nine; impacted trochanteric, two; capital, five.

* Chairman's address, read before the Section on Orthopedic Surgery at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Campbell, W. C.: Ann. Surg. **70**: 600 (Nov.) 1919.

If location is considered, ninety-four were central or intracapsular, and sixty-one trochanteric, from which it is quite evident that trauma of the hip region causes central or intracapsular fractures about 30 per cent. more frequently than in the trochanter. In three patients the opposite hip was fractured one or more years later, and in one the two hips were fractured at the same time. In five there was a coincident displacement or injury of the coccyx, with persistent coccygodynia.

Fig. 1.—Complete bony union, eight months after central fracture of neck of the femur.

The abduction method as described by Whitman has been employed as a routine in all central fractures, with the addition, recently, of artificial impaction as advocated by Cotton, which is regulated by a series of roentgenograms on the operating table. The details of the method and after-treatment have been described in previous contributions. The main feature in the procedure is perfect reduction and approximation of the fragments. Any retentive apparatus that constantly maintains the position of abduction and internal rotation is efficient, though I have not been able to accomplish this otherwise than by a plaster-of-Paris cast. It is often stated that the mortality is high in the aged, when so treated, but we have found this to be the reverse, as we have applied plaster-of-Paris casts to 205 elderly patients with only ten deaths.

Bony union of the neck of the femur is a very slow process in the aged, as there is no external callus. In consequence, the roentgen ray will only define position and relation of fragments under eight months, and, in a majority of cases, one year elapses before one can actually determine with absolute certainty the result, though it is often possible, by a change in the relation of the fragments, to demonstrate at a much earlier date that nonunion exists. It is also possible that the roentgen ray may define the fragments in perfect apposition at the end of six months, in conjunction with every clinical evidence of solid bony union; but later, as weight is borne, there may be a gradual bending of the neck, coxa vara, disintegration and separation of fragments, typical nonunion and total disability. One patient persisted in too early weight bearing, discarding all crutches, and was able to walk without limp, which subsequently caused the changes mentioned above, with complete separation of the fragments.

Roentgenograms may define, as early as three months, areas of increased density throughout the head, alternating with areas of atrophy. Along the line of fracture there is a mottled increase in density and evident callus activity from within, more apparent in the distal fragment; but this may not extend across the line of fracture, but organize on the fragments with an increasing space between their surfaces, which may be filled with fibrous tissue, holding the fragments in close approximation, a fibrous union; or the bony fragments may gradually separate, causing a typical ununited fracture. Under favorable circumstances, the callus will span the defect, which will gradually be transformed to bone trabecula until there is a complete bony restoration—a solid bony union. In many, the evolution of this process may require as long as eighteen months, during which time the type of union secured is a conjecture.

Clinically, there is no evidence by which the type of union can be determined with any degree of accuracy. When the patient reclines on a flat surface and is able to flex the hip with the knee extended, union is said to be firm; but this might be easily accomplished if the distal fragment is in the acetabulum or by a complex play of muscles in fixing the distal fragment. By roentgen ray and by open incision, nonunion has been found in individuals able to carry out this movement quite forcibly.

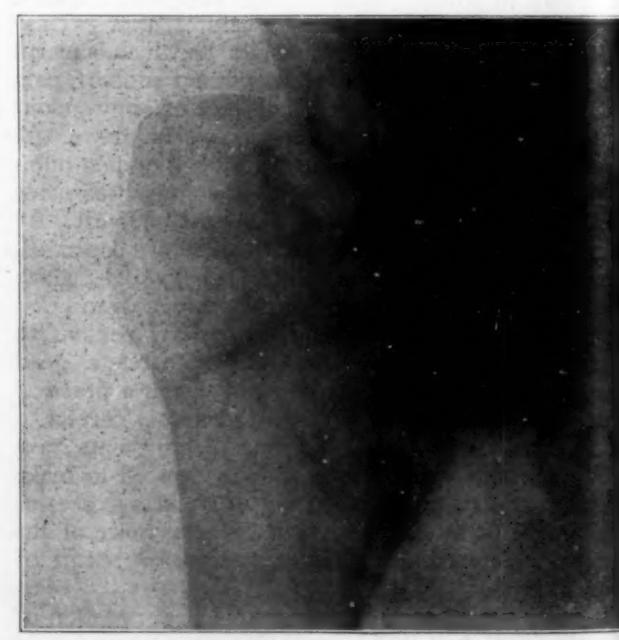

Fig. 2.—Complete absorption of the graft with solid bony union, two years after operation.

In order to determine the nature of union, it was decided to make a survey of as many cases as possible after one to five years had elapsed. No case was accepted that did not show, at the onset, a typical complete central or intracapsular fracture of the neck

of the femur, demonstrated by roentgen ray. No reports by mail or otherwise were considered; only those cases in which there was personal observation, with satisfactory roentgenograms under our supervision, form a basis of this investigation. Unfortunately, only twenty-one complied with requirements, but a sufficient number to give substantial evidence, which is as follows: nonunion, one; fibrous union, two; doubtful, two; solid bony union, sixteen. In the two classed as doubtful there was good function, the normal angle was restored, and no space existed between the fragments; but there was a definite line of cleavage, which might have been due to imperfect approximation from rotation of the proximal fragment. Bony union is probable in both, as there is no change in the angle at the end of fifteen months.

Of the two with fibrous union, one patient walked with only a very slight limp and had no disability; the other was unable to walk without crutches.

Of the sixteen with solid bony union, eight walked perfectly, without the slightest limp; five had a slight limp, and three walked with one crutch at the end of fifteen months, which should be discarded within the next six months.

More than 75 per cent. give solid bony union, but more than 90 per cent. excellent functional result, which is about the same conclusion as reached in the first report. Nonunion occurs in 10 per cent. In addition to the well-known causes of pseudarthrosis there are certain local factors:

1. Rotation of the head with imperfect approximation, which cannot always be avoided without open reduction.

Fig. 3.—Solid bony union but no absorption of graft, five years after operation.

2. Overabduction, causing a mechanical strain at the point of fracture and a separation of fragments when the limb is adducted to normal position after removal of apparatus.

3. A severance of the arterial blood supply to the head, causing bony atrophy and feeble callus output from the proximal fragment.

It was also thought that a discussion of ununited fractures of this region, in which operative procedures had been instituted, might give evidence of the type of union it is possible to induce, under unfavorable conditions. I [2] described the method employed in 1919. At this time, "in twenty the tibial graft was inserted through the neck and head; of these, fourteen were successful, two failed, one improved, and in three it is too early to reach conclusions." In these cases we were able to follow the patients more closely, as they realized the necessity of observing the fate of the graft. Union cannot be produced after extreme atrophy has supervened, but success has been attained in practically all cases in which the fracture has existed less than one year.

We were able to make a careful survey of only twelve out of forty-nine cases in which operation had been performed for nonunion. Eight were treated within less than one year after the occurrence of the fracture. Of these, seven (from three to five years after operation) walked perfectly, the roentgenograms showing firm bony union. In one, in which only one year had elapsed since the operation, there was a definite limp but solid bony union. Four patients were operated on from eighteen months to two years after the occurrence of the fracture. Of these, two walk with a limp, but solid bony union; in two, pain was relieved, but union fibrous, with inability to walk without crutches.

The graft is usually absorbed by the end of two years. In one there has been no diminution in the size of graft, after five years, though bony union is evident, the patient being able to do gymnastics, dancing and swimming, with perfect function of the hip joint.

CONCLUSION

The careful survey of twenty-one fresh and twelve ununited central or intracapsular fractures clearly demonstrates that solid bony union may be secured in a high percentage of fresh fractures of the anatomic neck, and also in ununited fractures under one year. It is quite evident that statements to the contrary, such as "Bony union does not occur" or "Bony union rarely occurs" are open admissions of inadequate and inefficient treatment, to which these unfortunate victims should not be innocently condemned.

869 Madison Avenue.

2. Campbell, W. C.: South. M. J. 8: 585-589 (Aug.) 1920.

Proceedings of World's Dairy Congress.—The World's Dairy Congress, which began its session at Washington, D. C., October 2, is the first international meeting of dairy interests held in the United States and is the only international conference of this kind that has been held since the beginning of the World War. The present meeting was authorized by the act of Congress of 1921, in accordance with which the President invited the nations of the world to send delegates. The Congress has the cooperation of federal, state and municipal governments, of welfare organizations, of scientific and educational institutions and in particular the International Dairy Association, which has headquarters at Brussels, Belgium. Forty nations have sent representatives to the Congress and several hundred delegates attended. The proceedings of the Congress will be published by the U. S. Department of Agriculture, an appropriation for that purpose having been made by Congress. The proceedings will doubtless constitute the most comprehensive source of information available on dairying and allied interests.

THE TREATMENT OF DIABETES WITH INSULIN *

FREDERICK M. ALLEN, M.D.
MORRISTOWN, N. J.

Within the limits of a brief paper it is possible to give only a brief summary of our methods and results to date, and refer to our former publications [1] for details. Many statements are intentionally phrased as opinions or beliefs, because the experiences are still too brief to be conclusive, and time will be necessary for a final decision.

METHODS

Purpose.—The purpose of insulin treatment is to improve the nutrition of patients with severe diabetes, and to add a safeguard against downward progress. Mild cases, which can be kept symptom-free on adequate diets, ordinarily do not require insulin. Insulin does not offer a cure of diabetes or a license for carelessness. We understand as part of the purpose that every patient is to be kept sugar-free. The question, Why should this be done? can be partly met by the counterquery, Why should it not be done? since others as well as ourselves have proved that this result is feasible, and any advantage of glycosuria to offset the probable danger has yet to be demonstrated.

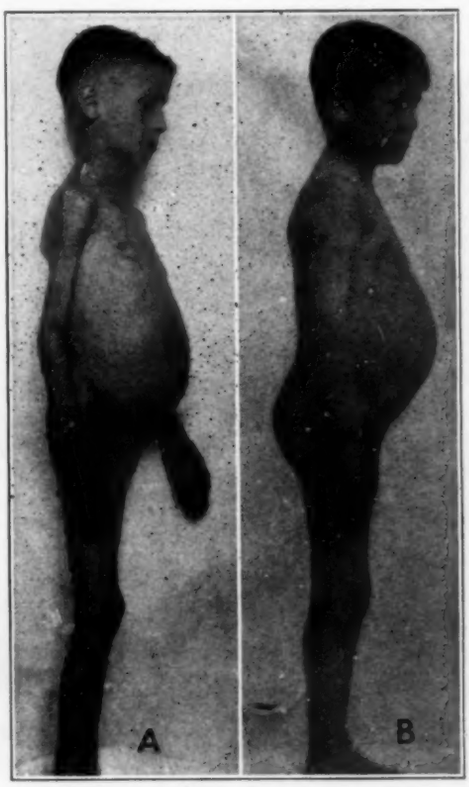

Fig. 1 (Case 1).—Appearance of patient: *A*, Aug. 20, 1922, before insulin treatment; *B*, June 20, 1923, ten months after insulin treatment.

Administration. — Insulin, which is manufactured commercially only by the Connaught Laboratories in Canada and by Eli Lilly & Co. in this country, is given by subcutaneous or occasionally by intravenous injection. Reliable investigators agree that it is inert when given by mouth or by rectum. Imitations bearing similar names and recommended to be taken by mouth have gained a surprising acceptance among physicians. The claims in their behalf seem to be supported only by such poorly controlled observations as have served heretofore for testimonials for all sorts of diabetic nostrums. The facts demonstrated concerning insulin complete the discredit of some proprietary preparations long ranked as frauds; and, if the enormous sales of the past continue, the medical profession will be morally responsible for such ignorance.

Institutional Treatment.—Now that there is an abundant supply of insulin and sufficient experience in its use, we find that from two to four weeks is about the average duration of institutional treatment required for uncomplicated cases. This institutional care, comprising the study of the individual needs of diet and dosage and the training of the patient in both these phases, is somewhat more important with insulin than under the former treatment by diet alone. Few patients do as well in the long run without this initial period of instruction. We doubt that thorough results can generally be obtained in a shorter time than that mentioned, and we believe that the endeavor should be for thoroughness rather than haste.

Initial Procedures.—Broadly speaking, two extremes are open in beginning treatment. The first diet may be one that will conduce to the quickest control of glycosuria and acidosis with the least demand for insulin; or what is considered theoretically as the ideal diet may be given immediately, and dependence placed on insulin for controlling symptoms. Likewise, with either plan of diet, the insulin may be begun with minimal doses and increased cautiously according to need, or the dosage may be pushed immediately so as to clear up all symptoms the first day, dependence being placed on glucose to antidote any possible overdose. Only a certain minimum of speed is attainable by either method, because the insulin requirement and other conditions change somewhat with time. We have adopted an intermediate course, in that we generally give fair quantities of protein and carbohydrate, perhaps from 50 to 75 gm. of each, and eliminate most of the fat from the diet for the first few days. If a case needs insulin at all, we seldom give less than 4 or 6 units the first day, and in severe uncomplicated cases we may begin with as much as 20 units.

Final Diets.—We aim, as heretofore, to give balanced diets. For example, if a patient is to receive 2,000 calories, this ration will include something like 100 gm. of protein and 100 gm. of carbohydrate. Diets overbalanced with fat are less agreeable and more dangerous, and the ultimate difference in insulin requirement is unimportant. On the other hand, more than 100 gm. of protein or 150 gm. of carbohydrate is generally unnecessary and undesirable because of the higher insulin dosage demanded.

We follow no arbitrary rule for establishing the total diet for a patient. It may appear scientific to determine the basal metabolism and then guess at the requirements for active life, but it is as well to guess at the whole diet in the first place. Some approximation can be based on the patient's height and weight, but persons who are of similar size sometimes require very different rations. In the long run, a maintenance diet is one on which the patient holds weight, an insufficient diet is one on which he loses weight, and a surplus diet is one on which he gains weight. There need be nothing abstruse in these reckonings.

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* From the Physiatric Institute.
* Read before the Section on Pharmacology and Therapeutics at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Allen, F. M., and Sherrill, J. W.: The Treatment of Diabetes with Insulin, J. Metabol. Res. **2**: 803-985 (Nov.-Dec.) 1922. Sherrill, J. W.: The Influence of Carbohydrate and Protein on Diabetes and the Insulin Requirement, ibid. **3**: 13-59, 1923. Allen, F. M.: The Influence of Fat and Total Calories on Diabetes and the Insulin Requirement, ibid. **3**: 61-176, 1923.

Final Insulin Dosage.—From a table already published, our average dosage in eighty-six cases is found to be 22 units daily. With experimental diets we have given as high as 100 units, but the highest dosage given regularly in any uncomplicated diabetes has been 80 units in one case and 60 units in three cases. The smallest doses are those of from 4 to 12 units a day, given in youthful cases still in the mild stage as a prophylactic against downward progress. There seems to be no need for extreme parsimony in the use of insulin; but, on the other hand, the difficulties and dangers increase when extremely high doses are used. We believe that making patients fat with huge doses of insulin while allowing them to show glycosuria on careless diets is reprehensible.

Distribution of Doses and Meals.—The ideal administration would imitate the action of the normal pancreas in providing a continuous supply of insulin with increases at times of special need. According to the Toronto and all other investigations, the direct effect of an insulin injection is ended within a few hours—perhaps from three to six. In general, if cases are severe enough to require insulin, we never treat them with a single injection daily. The theory that all food in excess of the patient's tolerance can be added to a single meal, and the insulin given in one dose before this meal, seems fallacious, because only a small part of the food is actually utilized during digestion. The greater part of it is stored, and the burden of its utilization then falls on the patient's pancreas at a time when there is no support from insulin. What happens with a single dose is probably that the pancreas has complete rest for a few hours and must carry the load unaided through the remainder of the day. Two doses a day, namely, before the morning and evening meals, are what we find advisable in the milder cases for providing the necessary tolerance without glycosuria or extreme hyperglycemia. When the daily dosage rises to 18 units or more, we generally divide it into three injections, one before each meal, in order to prevent extreme fluctuations of the blood sugar in either direction. In all ordinary cases the patient's own pancreatic function is adequate to bridge the intervals. In a few cases of unusual severity, it has been necessary to divide the daily dosage into four injections at six hour intervals. Otherwise, evening hypoglycemia and morning hyperglycemia or glycosuria have been troublesome. The midnight or late evening doses, with or without food, have not proved dangerous. Our basic plan is to make all meals and all insulin doses equal. If there are special tendencies in some cases to hypoglycemia at certain hours of the day and glycosuria at other hours, adjustments can be made by giving the largest meals and the smallest insulin doses at the periods of hypoglycemic tendency, and vice versa; but the possibilities of this method are limited, and the main conditions are fixed by the total daily diet and dosage.

Fig. 2 (Case 1).—Appearance of patient: *A*, Aug. 20, 1922, before insulin treatment; *B*, June 20, 1923, ten months after insulin treatment.

Home Treatment.—Insulin must nearly always be injected by the patient or some member of the household, since the physician can seldom spare the time, and few persons can afford the continuous service of a nurse. Patients have experienced no difficulty in learning the hypodermic technic, and, somewhat to our surprise, not a single one, even among the ignorant, has produced an abscess. The frequency of the injections, which at first thought seems formidable, has likewise proved a trivial price to pay for the improvement of health. Hypoglycemia is ordinarily emphasized as the chief danger and the reason for allowing more or less glycosuria; but properly prepared patients can readily avoid both these extremes, or can take a little orange juice or sugar if they ever experience the warning symptoms of weakness, tremulousness and perspiration. The dangers that will probably prove most serious with time are the familiar ones of infection and acidosis. Especially patients accustomed to high dosage may develop sudden acidosis from the cutting off of their insulin supply for a few days or other trivial accidents; and, as the symptoms are sometimes atypical, deaths may occur without diagnosis unless there is laboratory control with both blood and urine tests. Patients should be taught to eliminate most of the fat from their diet if there is a temporary stoppage of their insulin supply or if they develop an infection when away from medical observation.

CLINICAL RESULTS

Statistical Results.—In an experience beginning in August, 1922, and covering now about 250 cases with a high proportion of severe ones, we have had no deaths in uncomplicated cases of diabetes in which instructions were followed. One boy died who broke diet recklessly and failed to report. This case is exceptional because the standard of fidelity is higher now that a more nearly normal life is made possible. Only one uncomplicated case developed a fatal complication under treatment. This seemed to be an infection of some kind, but the exact diagnosis remained uncertain for lack of a necropsy. Otherwise the only deaths have been those from dangerous complications present at admission, as mentioned below.

Results as to Weight and Strength.—Broadly speaking, it seems possible to increase the weight to any desired level in any case. In general, however, we have held to a policy of undernutrition to the extent of keeping the average patient from 5 to 10 pounds (2 to 5 kg.) below standard normal weight. Much less insulin is thus required than when patients are fattened, and we believe that the greatest convenience, safety and benefit are thus afforded. On the other hand, we aim to allow sufficient food for every adult to have the strength to do his regular work and for every child to grow and develop normally. Exercise does not increase the insulin requirement, but tends rather to reduce it and sometimes even to cause hypoglycemia.

Influence on Tolerance.—As patients frequently gain tolerance with diet treatment alone, the influence of insulin can be gaged only in cases which have been under long observation and in which diet has already accomplished its utmost. A minority of such cases show a definite and sometimes considerable improvement of true tolerance with insulin, but such improvement has never amounted to anything like a cure. We are using intensive insulin treatment in some very early cases of juvenile diabetes, in the rather feeble hope of enabling these children to outgrow their diabetes. On the other hand, downward progress has not been observed in any patients thoroughly treated with insulin, and the need for increasing the dosage has arisen only in connection with increases of diet and body weight.

Fig. 3 (Case 2).—Appearance of patient: *A*, Aug. 20, 1922, before insulin treatment; *B*, April 10, 1923, five months after insulin treatment; June 20, 1923, seven months after insulin treatment.

INFECTIOUS COMPLICATIONS

Approximately twenty patients at admission have had infectious conditions sufficiently serious to be classed as complications. There has been a total of five deaths. The cases may be grouped broadly in three divisions: general infections, local infections and tuberculosis.

General Infections.—Conditions such as pneumonia and general septicemia scarcely require discussion, as the prognosis is governed largely by the severity of the infection. Insulin treatment may sometimes be of great assistance or even life-saving, by enabling the assimilation of a strengthening diet, increasing resistance, and warding off coma.

Local Infections.—Local abscesses, middle ear and mastoid infections, and gangrene of the feet have terminated favorably, except for one death from advanced gangrene of both feet with septicemia. Superficial gangrene has healed without operation, but involvement of bones and tendons has required amputation of the leg. These results are entirely similar to those obtained with efficient diet treatment. The chief advantage of insulin is in bringing the diabetes more quickly and radically under control. We have not observed any instance of unusual healing power conferred by insulin, but the more powerful control of sugar and acetone is a great advantage and should decidedly raise the general average of success.

Tuberculosis.—This is still one of the most dangerous complications. It is also the one that can be most directly combated by insulin, which should remove the specific diabetic susceptibility to this infection and which certainly permits the assimilation of a liberal diet and the building up of weight and strength thereby. This is the only condition in which we regularly allow diets as high as 3,500 or 4,000 calories and push the insulin dosage accordingly. Such diets, including 150 gm. each of carbohydrate and protein, have sometimes required as high as 100 units of insulin daily for their assimilation. Even here, we doubt the benefit of obesity, and favor reducing both diet and dosage when a fully normal weight has been attained. Of four patients with merely suspicious cough and pulmonary signs and without positive diagnosis of an active lesion, one discarded all treatment and died within a month of his diabetes; the other three have regained health to such an extent that they seem thoroughly safe. Of five cases showing bacilli in the sputum and more or less advanced lesions in both lungs, one proved fatal in the same manner that might have been expected had there been no diabetes, in two the patients have doubtful fighting chances, and two patients are regaining weight and apparent health at a remarkable rate. The possibilities of the insulin treatment are so great that all tuberculosis sanatoriums should carefully segregate their diabetic cases, and should either provide efficient means for the diet and insulin administration under laboratory control, or should send these patients to some place offering these facilities.

Dosage.—The insulin requirements with infection are generally high. If the infection is severe, 100 units or more of insulin daily may be required to control glycosuria, while after recovery from the infection a fraction of this dosage may suffice. Part of this requirement is doubtless explained by the acidosis that so often accompanies infection. To some extent, however, the requirement seems to be increased by gangrene and other local infections without acidosis or obvious systemic intoxication.

General Considerations.—The incidence of infections among diabetic patients is not reduced by insulin as compared with thorough treatment by diet. We believe that the tendency to minor infections is actually somewhat greater than among the patients whose blood sugar has been kept strictly normal by undernutrition. Our few overnourished patients have shown by far the greatest susceptibility to colds, sore throats, etc., and

one of them had an abscess from insulin while under a nurse's care at home. Other experiences have convinced us of the benefit of moderate undernutrition in the treatment of all infections except tuberculosis. One of the strongest considerations against allowing patients to show glycosuria is found in the danger that they may be subject to the well known complications of diabetes. It seems reasonable that sugar freedom should be as important for the prophylaxis as for the treatment of infections.

ACIDOSIS

Insulin Dosage.—In any case of existing or impending coma, we take a blood sample the very first thing, and inject 25 units of insulin into the vein before the needle is withdrawn. An additional 25 or 50 units is immediately injected subcutaneously. Further injections are then given subcutaneously every one to three hours, according to clinical and laboratory indications. The doses should be heroic. Less than 100 units for the first day is seldom advisable in any dangerous coma case, and our highest dosage in twenty-four hours was 485 units in a fatal case.

Carbohydrate. — No food is given except carbohydrate. Fruit drinks are most convenient for supplying fluid, and additions of glucose or sometimes starch are allowed more liberally than before, so as to make a total of from 100 to 200 gm. of carbohydrate in the first twenty-four hours. This carbohydrate is given from the beginning of treatment until danger seems to be past, no matter what glycosuria and hyperglycemia may be already present, for a double reason; first, increase of the glucose supply increases glucose combustion with a given insulin supply and thus aids in getting rid of acetone; second, it furnishes an additional safeguard against hypoglycemia with the high insulin dosage.

Alkali.—We have observed benefit from moderate doses of sodium bicarbonate, perhaps from 10 to 40 gm. in twenty-four hours, given by mouth if possible, or by rectum, vein or hypodermoclysis if there is persistent vomiting. It is less important than formerly, but nevertheless often highly valuable for making up the alkali deficit. The dosage should be limited more cautiously than formerly, because large quantities, in connection with the rapid clearing up of acetone bodies, may leave the patient with an alkalosis.

Fluids.—Besides fruit drinks, plain or carbonated water, soup, coffee, etc., by mouth, saline solution may be introduced by rectum, vein or hypodermic infusion. This forcing of fluids should start with the beginning of treatment; and, notwithstanding vomiting, the patient should in some manner receive and retain 4 or more liters of fluid in twenty-four hours. This fluid is necessary for overcoming the usual dryness of the tissues and for diuresis, which eliminates both acids when these are in excess and alkali when too large doses of soda have been given.

Other Adjuvants.—Catharsis, gastric lavage, bed rest, warmth, cardiac stimulation and other measures are used as indicated, but are of minor importance.

Results.—Statistical reports will be governed largely by the standard for distinguishing coma from precoma. Our published series comprises nine coma cases, with four recoveries and five deaths. If coma means complete unconsciousness, the proportion of deaths will be found high, even with insulin. This definition is not a just one, because the clinical picture of extreme acidosis varies, unconsciousness being more early and marked in some cases and dyspnea in others. Some moribund patients die before insulin has time to clear up their acetone, and others who have been freed from sugar and acetone die nevertheless from obscure causes. On the whole, the benefits of insulin in coma and precoma cases are miraculous.

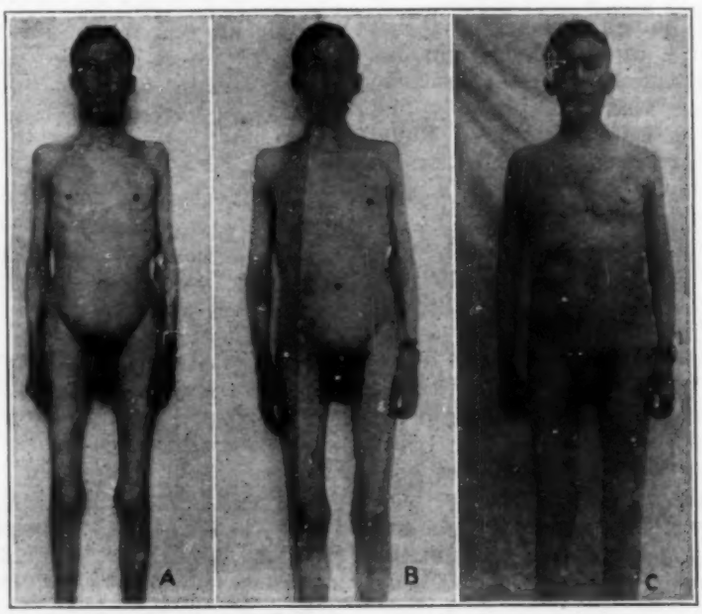


Fig. 4 (Case 2).—Appearance of patient: *A*, Aug. 20, 1922, before insulin treatment; *B*, April 10, 1923, five months after insulin treatment; *C*, June 20, 1923, seven months after insulin treatment.

THEORETICAL SIGNIFICANCE

Etiology of Diabetes.—The discovery of insulin completes the proof of the pancreatic island theory of diabetes. Only the slowness of the development of this proof has enabled various false doctrines of the etiology to make headway. Total pancreatectomy causes acutely fatal diabetes. Partial pancreatectomy produces a chronic diabetes in which progressiveness, acidosis, lipemia, and every detail of the clinical disease can be accurately reproduced. Lesions of the pancreas and its islands are demonstrable in the vast majority of necropsies of patients dying of diabetes. By setting up acute inflammation in the dog's pancreas under suitable conditions, diabetes can be produced which will progress in the usual manner to death; and at necropsy the healed scars of the original injury may resemble those in the typical human case, or may have disappeared altogether, as in rare human cases.[2] Hydropic degeneration of island cells is similar in the clinical and experimental forms, and has the same significance of an anatomic breakdown due to severe functional overstrain.[2] Insulin is an extract of the pancreatic islands, and among the thousands of diabetic patients treated with it not a single refractory case has been reported. No lesions of any other organs hold any place in the pathology of diabetes, unless as chance complications.

2. Allen, F. M.: The Pathology of Diabetes, J. Metabol. Res. 1, January and February, 1922.

No experimental interferences with any other organs create anything resembling true diabetes, for the glycosuria from piqûre, epinephrin, etc., is merely a brief discharge of sugar by rapid glycogenolysis and altogether lacks the central feature of diabetes: namely, the inability to use sugar. For the same reason, epinephrin should not be loosely spoken of as an antagonist of insulin, any more than asphyxia and other causes of glycogenolysis. Not only does epinephrin not inhibit the essential function of insulin, namely, the utilization of sugar, but it is even uncertain that epinephrin has any natural function of causing either glycogenolysis or hyperglycemia.

Progressiveness of Diabetes.—Insulin is not a cure of diabetes, because it is inconceivable that a pancreatic extract should be able to restore a damaged pancreas. It can, however, relieve the strain on the patient's pancreatic islands more easily and thoroughly than has been the rule heretofore. Our previous studies [3] have convinced us that, apart from occasional infections, functional overstrain by diet is the essential cause of the progressiveness of human diabetes, and that sufficiently careful avoidance of such overstrain can prevent such progressiveness in clinical cases just as in experimental animals. This view will probably find wider acceptance, now that insulin has been found apparently to halt the progressiveness of all cases in which it has been thoroughly used to date. We must again point out that the progressiveness observed heretofore has generally been due to disregard of basic dietary principles, particularly that of undernutrition.

The records of Geyelin [4] show that diabetic children were frequently nourished so as to weigh more than before the onset of their diabetes. The frequent infections in these children are typical of patients with high diets and high blood sugars, and are in contrast to the practical immunity of our patients. Both the overnutrition and the infections are direct causes of progressiveness. Therefore, the actual result of the high diets was a far more extreme degree of emaciation and weakness than found in any corresponding cases in our series treated by restriction of total calories and body weight from the outset.

So many misstatements, some of them intentional, have been made concerning the degree to which I have "starved" diabetic patients that I must again call attention to the published detailed statistics [5] of both the mortality and the diets of patients in this institute. In this and other publications we have furnished evidence that thorough control of the diabetes by undernutrition conserves the tolerance so as not only to prolong life but also maintain strength, comfort and nutrition to a higher degree than any other plan. Those who have professed to keep diabetic patients fat and strong with high diets are again invited to publish their results in similar detail. The average severity of our cases has been unusually high, as is natural in an institute of this kind. We have had to undernourish many patients to an unfortunate degree, and the regrettable number of invalids and semi-invalids with the severest diabetes has been freely acknowledged. But, except for eight cases that were hopelessly severe when admitted, not one of our patients who was faithful to diet has died, and not one has progressed from an incipient to an extreme stage. They have not only been kept alive to receive the benefits of insulin, but, furthermore, they have remained at least able to be up and to walk about. I challenge any opponent of undernutrition to duplicate this record, or to justify the numerous deaths that have resulted from the policy of overfeeding for deceptive transitory benefits.

Influence of Total Calories on Glycosuria and the Insulin Requirement *

	Diet							
Date	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories	Glycosuria, Gm.	Plasma Sugar, Mg. per 100 C.c.	Weight, Pounds	Insulin Units
9/ 1/22	60	115	30	1,400	++	312	..	7
9/ 2/22	60	115	30	1,400	+	200	36	7
9/ 3/22	60	115	30	1,400	0	...	..	7
9/ 4/22	60	115	30	1,400	6.0	306	36	7
9/ 5/22	60	15	40	535	5.3	306	..	7
9/ 6/22	60	15	40	535	1.9	...	36	7
9/ 7/22	60	15	40	535	3.3	283	..	7
9/ 8/22	60	15	40	535	4.0	...	36	7
9/ 9/22	60	15	40	535	4.8	250	..	7
9/10/22	60	15	40	535	4.8	...	36	7
9/11/22	60	15	40	535	0	195	..	7
9/12/22	60	15	40	535	0	...	36	7
9/13/22	60	15	40	535	0	157	..	7
9/14/22	60	15	40	535	0	...	36	7
9/15/22	60	15	40	535	0	...	36	7
9/16/22	60	15	40	535	0	203	36	7
9/17-18/22	60	15	40	535	0	...	..	7
9/19/22	60	15	40	535	0	126	36	7
9/20/22	60	15	40	535	0	...	..	7
9/21/22	60	15	40	535	0	139	36	6
9/22-23/22	60	15	40	535	0	...	..	6
9/24/22	60	15	40	535	0	137	36	6
9/25/22	60	115	30	1,400	0	...	..	6
9/26/22	60	115	30	1,400	0	...	36	6
9/27/22	60	115	30	1,400	0	...	..	6
9/28/22	60	115	30	1,400	1.4	226	36	10
9/29/22	60	115	30	1,400	+	...	..	12
9/30/22	60	115	30	1,400	0	...	36	14
10/ 1/22	60	115	30	1,400	+	...	..	16
10/ 2/22	60	115	30	1,400	0	...	36	16
10/ 3/22	60	115	30	1,400	0	...	..	18
10/ 4/22	60	115	30	1,400	0	164	36	18
10/ 5/22	60	115	30	1,400	0	...	..	18
10/ 6/22	60	115	30	1,400	0	...	37	18
10/ 7/22	60	115	30	1,400	0	...	37	18

* A prolonged regimen of 1,400 calories had gradually brought on glycosuria. Withdrawal of 100 gm. of fat and addition of 10 gm. of carbohydrate then reduced the total calories to 535 without changing the supposed glucose value of the diet. The usual benefits of undernutrition are seen in the urine and blood sugar. With a return to 1,400 calories, an increase of insulin from 7 to 18 units was insufficient to prevent hyperglycemia, so that the insulin requirement was approximately three times as great with the high as with the low fat ration.

Relation of Insulin to Different Foods.—When equal numbers of calories are given in the form of different foodstuffs, it is found that the greatest requirement of or consumption of insulin is created by carbohydrate, the next greatest by protein, and the least by fat. Also, in our experience, it is not possible to base comparisons on any theoretical glucose values of foods. Protein seems to have less influence than its equivalent of preformed carbohydrate, provided the caloric value of the diet is kept equal; while fat, though slow in its action, gradually produces a sugar excretion or a demand for insulin out of all proportion to any quantities of sugar known to be derivable from it. Such experiments are convenient for giving a mathematical expression to the fact, demonstrated some years ago as the basis of the undernutrition treatment, that not merely glucose but all components of the diet are somehow related to the pancreatic function and have an influence on diabetes. Unfortunate misconceptions regarding high fat diets have recently caused much harm. From one standpoint, all diabetic diets have been composed chiefly of fat. Also, the leading advocates of high fat diets in

3. Allen, F. M., and Sherrill, J. W.: Clinical Observations on Treatment and Progress in Diabetes, J. Metabol. Res. **1**: 377-434 (March) 1922. Allen, F. M.: Observations on the Progressiveness of Diabetes, M. Clin. N. Am. **6**: 465-474 (Nov.) 1922.

4. Geyelin, H. R.; Harrop, G.; Murray, M. F., and Corwin, C.: The Use of Insulin in Juvenile Diabetes, J. Metabol. Res. **2**: 767-791, 1922.

5. Allen and Sherrill (Footnote 3).

this country have not employed actually high fat allowances as used in Europe, but have kept to a distinct undernutrition level in order to control symptoms in cases of any real severity. On the other hand, the claim that fat feeding clears up either glycosuria or acidosis as effectively as fasting or semifasting was never proved, and is easily shown to be false by experiments with or without insulin. Campbell,[6] an unbiased observer, contributed a useful demonstration that even low or "basal" diets act in a radically different manner than fasting, in causing not only glycosuria but also coma. I have recently reported numerous experiments[7] expressing numerically in terms of insulin the very powerful influence of fat additions to the diet in diabetes. The accompanying table gives one illustration. There is no certainty as yet whether insulin is concerned directly in the utilization of all foods, or whether it serves specifically for the metabolism of glucose while the non-glucose-forming foods play a part only by affecting this metabolism in some indirect way. The essential fact can be confirmed, however, by any physician who will compare high and low caloric diets for a sufficient length of time, especially in severe cases, and it should be duly noted by theoretical and laboratory workers who are prone to link insulin with glucose alone.

CONCLUSION

The insulin treatment should be carried out in conjunction with accurate diets under laboratory control to assure that patients remain sugar-free. It involves the inconvenience of frequent subcutaneous injections and other disadvantages, does not simplify diabetic treatment or justify careless methods, and is not the final step in diabetic research. Nevertheless, this discovery of Banting and his associates is the first replacement of negative by positive therapy in diabetes. It affords the possibility of relegating emaciation, progressiveness, acidosis, and most of the disabilities and fatalities of diabetes, to the past. It therefore stands as one of the greatest achievements of medicine for the relief of human suffering. Its theoretical and indirect consequences may ultimately outweigh the immediate and practical ones.

ABSTRACT OF DISCUSSION

DR. W. D. SANSUM, Santa Barbara, Calif.: I should like to ask Dr. Allen to tell us what his estimate is of the sugar burning power of the Lilly unit and whether, in their experience, this unit has had a constant value. The unit in the beginning was defined as the amount of insulin necessary to produce a convulsion in a rabbit weighing 1 kg. It is now defined as one third of the amount of insulin necessary to produce a convulsion in a rabbit weighing 2 kg. based on the belief that the convulsion producing dose varies not with the weight but with the square of the weight. We have found that the convulsion dose is proportional to the weight. We have used larger doses of insulin averaging from 60 to 70 units per patient daily, but ninety out of our 150 insulin patients have had food tolerances below 1,000 calories. We have noted only small gains in tolerances in the patients who have had careful dietetic care, and marked gains in many of the patients whose diets have previously been neglected. I have had seven coma cases. Three of these patients were in deep coma and died. The other four are living.

DR. SEALE HARRIS, Birmingham, Ala.: Had it not been for Allen's work in pointing out the values of the low diet, and for what Woodyatt has taught us regarding the ratio of carbohydrate to fats, insulin would not have been of a great deal of value. Much has been said regarding the use of insulin and allowing patients to eat what they please. In one city the use of insulin was discredited because an important citizen was told to eat what he pleased while taking insulin, and he came very near having serious consequences. The important thing in treating diabetes, with or without insulin, is to teach the patient how to live—to teach him the arithmetic of carbohydrates and fats and proteins. But that is not sufficient. In many cases the predisposing cause, and sometimes the direct cause, of diabetes is a pancreatitis. Pancreatitis is a very much more frequent condition than is generally supposed. Of course, the great majority of patients who have pancreatitis recover without having diabetes; but the essential factor in the production of diabetes is a damaged pancreas. The source of this pancreatitis is, of course, important. Banting believes that focal infections have something to do with it. One of the greatest pieces of work done is that by McCarrison, feeding animals on a high carbohydrate diet and with no vitamins. Those animals had intestinal lesions, and as a result of that there were focal infections in all parts of the body. Naturally, the pancreas, the liver and the other abdominal viscera are the ones to suffer most. One great fault of our present treatment of diabetes is sometimes failing to consider other phases of handling the diabetic patient. A patient may have diabetes and something else too. We must look for focal infections, and for tuberculosis. Many of these patients who have been on a low diet for a long time have developed tuberculosis; and I believe that the reason they have developed tuberculosis is our failure to consider the vitamin content of the diet, along with the carbohydrate values.

DR. CHARLES W. MCGAVRAN, Columbus, Ohio: I should like to add one word: and that is as to the economic value of insulin. Time after time we hear a man say that he would rather spend seven of his fifteen dollars a week for insulin and eat, than not to work and starve. So we must consider insulin from the economic standpoint. In reference to undernutrition: We must be careful not to overfeed. Joslin said that 75 per cent. of these cases are due to overweight. Let us be careful not to overfeed our patients simply because insulin will enable them to eat, but feed only enough to make them efficient citizens.

DR. FREDERICK M. ALLEN, Morristown, N. J.: The Lilly unit based on rabbit tests was not constant at first for various reasons; chiefly, deterioration after standardizing. Recently it has become sufficiently satisfactory, so that for clinical purposes we find little difficulty in using the Lilly unit according to label. The question as to the sugar equivalent per unit of insulin opens up a deeper problem and includes our general point of view of diabetes. Various workers have reported a sugar equivalent of from 1 to 4 gm. per unit. It seems to me that these discrepancies will be explained partly by variations in the cases, and so forth, but chiefly in the method of testing. We ourselves do not believe in any sugar unit; we do not believe that insulin is related solely to sugar. That is contrary to the views of the majority. We shall soon publish a paper in support of our views and a criticism of the suggested ratios. It seems to me that any clinician can find that if he uses a low calory diet and a certain amount of glucose in that diet, he can get along with low insulin doses; and if he uses a high calory diet he may have to use three or four times as much insulin. That is the main reason why we take the view that an arbitrary relation between insulin and glucose is erroneous. The work of those who have determined the changes of insulin requirement with additions or subtractions of carbohydrate has been useful, because it is a means of standardizing insulin under those conditions, and it can be said that, under the conditions mentioned, insulin does have a certain ratio to carbohydrate value. But our point is that if we keep the carbohydrate and other factors constant and vary only the fat of the diet, great changes of insulin requirement can likewise be found in relation to fat, total calories and body weight.

6. Campbell, W. R.: Ketosis, Acidosis and Coma Treated by Insulin, J. Metabol. Res. **2**: 605-635, 1922 (Cases W. M., p. 617, and M. T., p. 618).
7. Allen (Footnote 1, third reference).

POSITIVE IDENTIFICATION OF SPHENOID AND ETHMOID SINUSES *

AMEDEE GRANGER, M.D.
Director, Roentgen-Ray Department, Charity Hospital; Professor of Radiology, Post-Graduate Medical School of Tulane University
NEW ORLEANS

I admit frankly that if the otolaryngologist had been satisfied with the results obtained from the roentgenographic examinations of the paranasal sinuses, I would never have carried out the experiments which form the basis of this paper. And I feel deeply indebted to my colleagues, the otolaryngologists of New Orleans, for the incentive to undertake this work, and when the experiments were under way, for valuable suggestions and assistance. Later, when the results obtained with dried skulls had to be confirmed on living heads, with and without diseased sinuses, their cooperation and advice became invaluable.

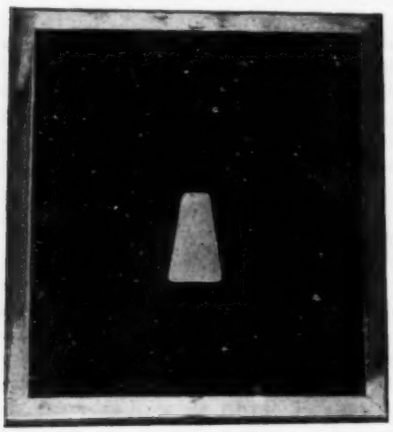


Fig. 1.—Head rest designed by author.

I had become thoroughly convinced of the inadequacy and inaccuracy of the findings in roentgenograms intended to show the sphenoid and the ethmoids. I knew of no definite and positive landmarks by which the sphenoid sinus could be identified, and I not only found it difficult and almost impossible when roentgenographing the heads of different subjects to obtain roentgenograms that were similar in appearance and in which the same landmarks could be seen, but I experienced nearly as much difficulty when roentgenographing the same subject a second time.

At the outset of the experiments, I fortunately avoided what I believe to have been the two chief causes for the small amount of success obtained heretofore in this work; namely, making use of the nose as one of the points of support for the head, and studying the sphenoid sinus without at the same time studying the ethmoid cells, which lie practically in the same plane and bear a close anatomic and clinical relation to it.

The first of these causes was eliminated by making use of the head rest illustrated in Figure 1, which consists of a sheet of bakelite, in which an aperture for the nose has been cut, attached to a frame one-half inch thick and three-fourths inch wide, the whole surrounded by a strip one-fourth inch thick and one-fourth inch deep. By these means this bakelite sheet, which serves as a support for the skulls and heads, can be held securely over a cassette or film holder, and at the same time kept one-half inch away from them. When the nose is placed in the aperture cut in the bakelite sheet—the size and position of this aperture having been carefully predetermined—the head is automatically centered over the same part of the film, the soft tissues of the nose can be compressed without pain or discomfort, and the head can be made to rest on the same two points—the alveola-glabella—on which all dried skulls rest when placed on this head rest with their nasal bones inserted in the aperture made to receive them. These two points, which bear a very constant relation to each other even in heads of different shapes and sizes, now afford a firm support for the head, doing away with the tendency to pivot in the direction of either its longitudinal or its transverse diameter, a tendency always present when the nose is one of the points on which the head rests.

Fig. 5.—Skulls D (white female), B (white male) and C (negro male).

Fig. 2.—Postero-anterior, 23 degree angle view of Skull A.
Fig. 3.—Postero-anterior, 107 degree angle view of Skull A.
Fig. 4.—Lateral view of Skull A. Abbreviations used in the illustrations: *A*, anterior ethmoid cells; *F*, frontal sinus; *G, G* line, upper boundary of the sphenoid sinus in the 107 degree angle view; *C*, upper boundary of the posterior ethmoid cells in the 107 degree angle view; *M*, maxillary sinus; *O*, anterior boundary of the sphenoid sinus in the lateral view; *P*, posterior ethmoid cells; *S*, sphenoid sinus; *X*, upper boundary of the sphenoid sinus in the 23 degree angle view.

The second cause of failure was readily avoided by sawing a dried skull through the sagittal plane just to one side of the nasal septum, thus exposing to full view the sphenoid sinus and the ethmoid cells. On the right side, the sphenoid sinus was filled with plaster of Paris, and the posterior ethmoid cells were filled with Mellotte's metal, and on the left side, the anterior ethmoid cells were filled with amalgam. The two halves of the skull were then glued together. The filled and glued skull was held on the head rest with the nasal bones in the aperture cut to receive them, and with the nasal spine projecting within and resting against the lower edge of this aperture, the skull resting on the alveolar point and on the glabella. The very distinct advantage of this new position lay in the fact that if, as a result of our experiments with the

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

dried skulls, any new and more positive landsmarks were brought to light, we could with a reasonable degree of confidence expect to find the same landmarks on roentgenograms of heads made while resting in this position—the alveola-glabella.

Roentgenograms were made at various angles, the object sought being to cause as great a disassociation of the superimposed shadows of the filled sphenoid and ethmoids as possible. After many trials, in which the angle was varied 0.5 degree at a time, it was found that the best results were obtained with a 23 degree angle when the shadow of the sphenoid was projected the farthest down, and with a 107 degree angle, when it was projected the farthest up.

Fig. 6.—Postero-anterior, 107 degree angle view of Skulls D, B and C before the sphenoid sinus and the ethmoid cells had been filled with opaque substances.

LANDMARKS

Figure 2 is a postero-anterior, 23 degree angle view of Skull A, the shadows cast by the filled sphenoid sinus and the ethmoid cells all clearly brought out. The sphenoid shadow is bounded above by the line *X*. This line is formed by the posterior edge of the floor of the anterior cerebral fossa. The shadows of the lesser wings of the sphenoid can be seen passing outward through the orbits. As is nearly always the case, one sphenoid sinus (the right sinus in this skull) is larger than the other. The anterior ethmoid cells are located just below the frontal sinuses.

Figure 3, a postero-anterior, 107 degree angle view of Skull A, shows the sphenoid sinus and the two groups of ethmoid cells appropriately marked and clearly outlined by the different densities of the opaque substances with which they are filled. The sphenoid shadow is bounded above by the curved line *G*. This line, which I consider the most valuable landmark, is formed by that portion of the bony wall of the sphenoid called the optic groove. It curves downward on each side toward the shadow of the anterior clinoid processes to reach the optic foramen.

By means of the head rest, so that the skulls could be held firmly in the alveola-glabella position, and of a 17-degree angle block placed so as to give the skull an inclination of 107 degrees, no difficulty whatever was experienced in making postero-anterior roentgenograms which showed this very important landmark.

It will be observed, further, that the shadow of the filled ethmoids is bounded above by the line *C*, formed by the inner or cerebral plate of the orbital or horizontal portion of the frontal bone, and that its inner boundary is indicated by the vertical shadow of the superior turbinate bones. The posterior cells lie above, and the anterior cells lie below the shadow of the middle turbinate bones.

In Figure 4, a lateral view of Skull A, the shadow of the filled sphenoid is bounded anteriorly by the curved line *O* formed by the shadow of the greater wing of the sphenoid. This line, recognized as the anterior boundary of the middle cerebral fossa, becomes a readily seen and very accurate anterior boundary for the sphenoid sinus also.

Three more skulls were secured—Skulls D, B and C, and it can be seen from Figure 5 that they varied greatly in shape and size. These three skulls were also sawed in the sagittal plane, but this time it was decided to fill the sphenoid sinus and the two groups of ethmoid cells on the same side if three substances opaque to the roentgen rays could be obtained which would produce shadows of different densities so that these could be differentiated on the roentgenograms.

Fig. 7.—Postero-anterior, 107 degree angle view of Skulls D, B and C after the sphenoid sinus and the ethmoid cells had been filled with opaque substances.

After many trials, this was done by filling the sphenoid sinus with plaster of Paris, the posterior ethmoid cells with a thick paste of an aluminum paint, and the anterior ethmoid cells with zinc oxid powder worked into a paste with oil of cloves.

A study of Figures 6 and 7, postero-anterior 107 degree angle views of Skulls D, B and C before and after the sphenoid sinus and the ethmoid cells had been filled with the opaque substances, and of Figures 8 and 9, postero-anterior 23 degree angle views of Skulls D, B and C before and after the sphenoid sinus and the ethmoid cells had been filled with the opaque

substances, demonstrates conclusively that: (1) by making use of the technic recommended, it was possible to duplicate the roentgenograms of the same skull with great exactitude; (2) the roentgenograms of these three skulls made in the same position and angle are strikingly similar, whereas their photographs are very unlike in appearance; (3) the important landmarks which have been described can be readily seen and identified in the roentgenograms of all three skulls.

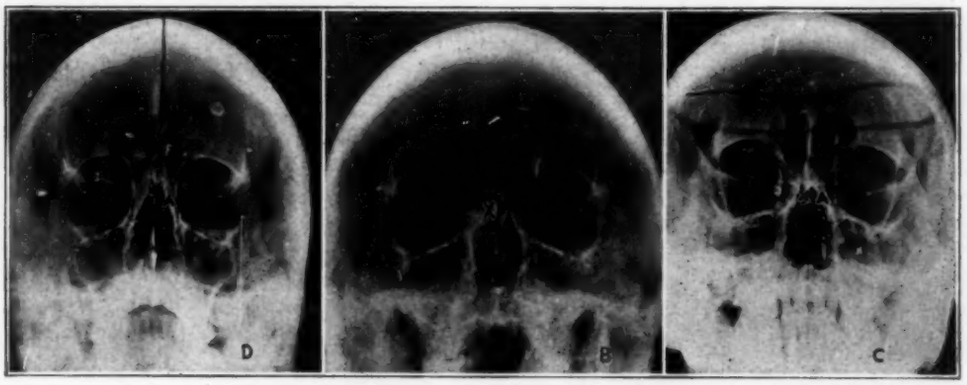


Fig. 8.—Postero-anterior, 23 degree angle view of Skulls D, B and C before the sphenoid sinus and the ethmoid cells had been filled with opaque substances.

Figure 10, a set of roentgenograms of the head of a subject who had no disease of the paranasal sinuses, shows very clearly all the landmarks described.

Figure 11, a set of roentgenograms of the head of a patient on whom a radical operation for frontal, ethmoid and sphenoid sinusitis was performed several months ago, and in whose sphenoid sinus a thick paste of bismuth was packed through an unusually large opening resulting from that radical operation, is most interesting because it proves on the living head the accuracy of the landmarks obtainable with the technic recommended.

It must be noted that the shadow produced by the bismuth lies below the line *G* in the 107 degree angle view; below the line *X* in the 23 degree angle view; and behind the line *O* in the lateral view. It must be further noted that this opaque shadow does not reach the lines *G* and *X* because the hyperplastic changes in the mucous membrane lining the sphenoid sinus prevented the bismuth paste from getting closer to its bony walls.

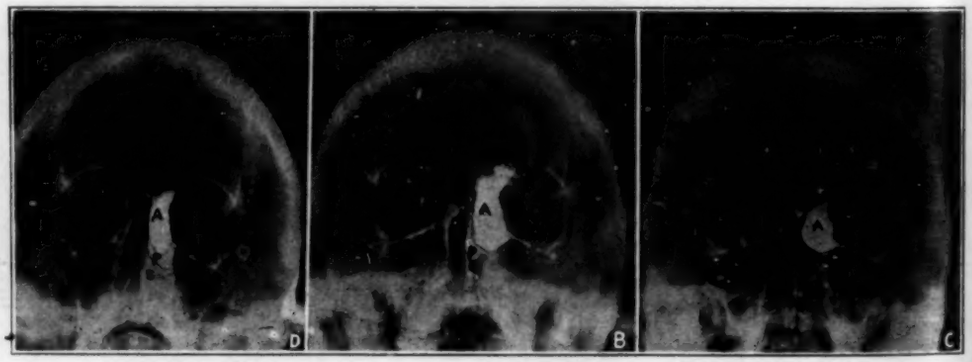


Fig. 9.—Postero-anterior, 23 degree angle view of Skulls D, B and C after the sphenoid sinus and the ethmoid cells had been filled with opaque substances.

INTERPRETATION AND DIAGNOSIS

When studying the filled skulls (Figs. 7 and 9), it must be carefully noted that the shadows of the filled sinuses occupy the following order from above downward: sphenoid, posterior ethmoids, anterior ethmoids in the 107 degree angle view, and anterior ethmoids, posterior ethmoids, sphenoid in the 23 degree angle view, as this knowledge is of great importance for the correct interpretation of these roentgenograms.

A convincing explanation for the specific arrangement of the shadows just described will be found in Figure 12, which illustrates the projection of the shadows of the filled sphenoid and ethmoids of a skull on postero-anterior roentgenograms made in the 23 degree angle position and in the 107 degree angle position.

It must also be noted that whereas the curved line *G* is plainly seen in its entirety in roentgenograms of the unfilled skulls, it is not visible on the filled side in roentgenograms of the filled skulls, as its shadow blends with that of the opaque material filling the sphenoid sinus, but it remains distinctly visible on the side that has not been filled. As will be shown later, this observation is of the greatest diagnostic value.

I completed my work with the dried skulls a little more than a year ago, and since that time I have had many opportunities to test the value of the head rest and of the position here described when making roentgenograms of the heads of patients known to have, or suspected of having, disease of the paranasal sinuses in my private and hospital practice.

The work done at the Charity Hospital is especially convincing, because in that state institution with 1,200 beds, located in the city of New Orleans with its large cosmopolitan population, including some 150,000 negroes and foreigners, I had to deal with a very ignorant class of patients, some of whom hardly understood English. The great variety of sizes, types and shapes of heads that had to be roentgenographed would delight anthropologists.

In spite of all these difficulties, it was possible by making use of the head rest and of the alveola-glabella position of the head to obtain postero-anterior views of 107 and 23 degree angles that are strikingly similar in appearance and which show plainly in every case the important sphenoid and ethmoid landmarks already described.

I was afforded at the same time many opportunities to test the value of the landmarks and the accuracy of the plate readings.

As a result of this experience, I have learned to attach the greater importance to the 107 degree angle view, using the 23 degree angle view to confirm the

findings obtained from the former view, and to show the frontal sinuses.

The importance of the *G* line, which forms the upper boundary of the sphenoid sinus in the postero-anterior 107 degree angle view, has been fully and conclusively demonstrated. I was able repeatedly, by a careful study of that line and of the density of the shadow of the sphenoid region which lies immediately below it, to make diagnoses confirmed at operation of acute sphenoiditis (when there was pus in the sinus); polypoid sphenoiditis, and chronic suppurative sphenoiditis with osteoplastic changes.

In several cases of unilateral optic neuritis in which the teeth, the tonsils, the sinuses (maxillary, frontal, ethmoids), and other anatomic locations that are usual sources of infection had been excluded, and the cause was still undiscovered, and in one case of attacks of severe hemicrania recurring at irregular intervals during a period of several years, I made a diagnosis of hyperplastic sphenoiditis on the affected side based on alterations of the *G* line to be described in detail later.

A B C

Fig. 10—Normal sphenoid and ethmoids in a living subject: *A*, postero-anterior view, 107 degree angle; *B*, postero-anterior view, 23 degree angle; *C*, lateral view.

Unfortunately, not one of these patients would submit to operation; and although it can hardly be a coincidence that, in these twelve or more cases, definite evidence of disease was found only in the sphenoid sinus on the same side as the optic neuritis and the hemicrania, these diagnoses still remain to be corroborated by the opening of the sphenoid sinus.

DIAGNOSIS OF SPHENOIDITIS

Acute Sphenoiditis (left side).—The *G* line is absent on the left side (Fig. 13 *A*), and the shadow of the region (sphenoid sinus) below the *G* line and above the *C* line is slightly increased in density. If both sphenoid sinuses contained pus, the *G* line would be absent or very indistinct on both sides, and the shadows of both sphenoid regions (space directly below the normal site of the *G* line) would be slightly increased in density. If both sphenoid sinuses were filled with thick pus, the *G* line would be absent and the sphenoid regions would be seen as a dense shadow with a distinct upper convex outline corresponding to the course of the *G* line in normal sphenoids.

Polypoid Sphenoiditis (right side).—The *G* line is absent on the right side (Fig. 13 *B*), and the shadow of the sphenoid region shows a marked increase in density with the convex upper border corresponding to the course of the *G* line in normal sphenoids. The shadow of the right ethmoid region also shows a marked increase in density. If both sphenoids are involved, these changes are seen on both sides.

The history of the patient and a careful rhinologic examination will readily differentiate the roentgenologic picture of this condition from that of an acute empyema

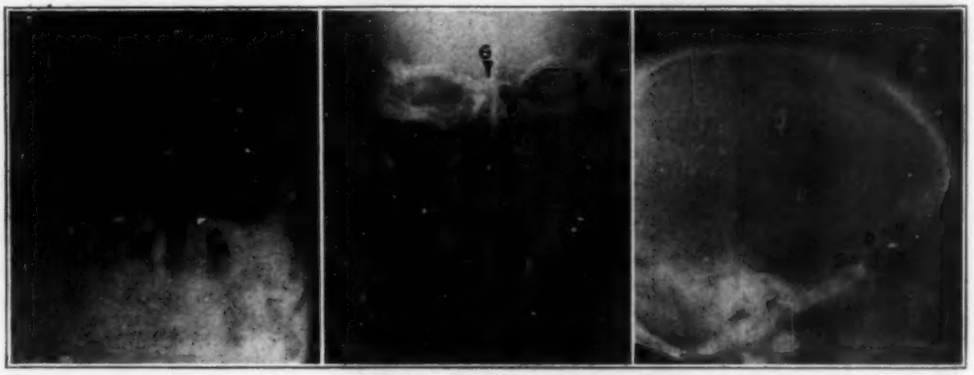
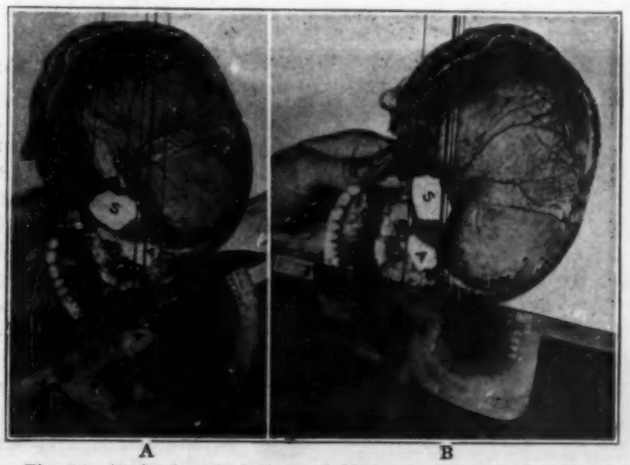


Fig. 11.—Filled sphenoid sinus of subject who had had frontal, ethmoidal and sphenoidal operations.

of the sphenoid complicating an acute or chronic ethmoiditis which it may resemble.

Hyperplastic Sphenoiditis (right side).—The *G* line is thicker on the right side (Fig. 13 *C*), but it is less sharply defined than in normal sphenoids or in chronic sphenoiditis with osteoplastic changes. In some cases, the *G* line, besides being less sharply defined, is both thicker and denser on the diseased side. In still other cases, the *G* line is broken, less sharply defined, and shows here and there areas of increased density and thickness on the diseased side. In all the cases of this type which came under my observation, the *G* line showed alterations on one side only, and little or no



A B

Fig. 12.—Projection of shadows of filled sphenoid and ethmoids of a skull on postero-anterior roentgenograms made in the: *A*, 23 degree angle position; *B*, 107 degree angle position.

changes in density were seen in the subjacent region (sphenoid sinus), and in the ethmoid regions.

Chronic Sphenoiditis with Osteoplastic Changes (right side).—The *G* line is more distinct and thicker on the right side (Fig. 13 *D*), and the subjacent region (sphenoid sinus) is denser than normal. In the cases of this type which I saw, the ethmoid cells were denser

than normal, and their trabeculae and walls were thicker.

When the *G* line showed none of the alterations described above and was clearly outlined (Fig. 10 *A*), I reported that there was no disease of the sphenoid sinus. These negative sphenoid findings were confirmed in all the patients suffering from diseased ethmoids who

Fig. 13.—Typical postero-anterior views, 107 degree angle, of heads showing the alteration of or absence of the *G* line, and the density of the sphenoid region in: *A*, acute sphenoiditis; *B*, polypoid sphenoiditis; *C*, hyperplastic sphenoiditis, and *D*, chronic suppurative sphenoiditis.

were operated on, and in all the patients with or without diseased ethmoids who were kept under observation and treatment.

I have discontinued the use of the lateral view for the diagnosis of disease of the sphenoid and ethmoids because I have become convinced that it helped little, if at all, in determining the presence of increased density of those regions. But I am certain that it is useful to determine the size of the sphenoid sinus, its depth and length, the presence of adventitious septums, and the distance from the subnasal point (base of the nasal spine) to the anterior sphenoid wall.

Fig. 14.—Lateral view of Skull E.

The sphenoid sinus in Skull E (Fig. 14) is of unusual length, extending beneath and beyond the floor of the sella turcica. In a patient with such a sphenoid sinus, if the operator was not aware of the true condition, he would have cause for worry because of the great depth to which his instrument would penetrate.

Skull F is unusual because the sphenoid is subdivided by several septums. Figure 15 shows clearly one of these septums as thick as the normal perpendicular septum which separates the right from the left sphenoid sinus, lying horizontally and dividing both these sinuses into two large cells, an upper and a lower. These adventitious septums would in all likelihood be detected by the careful study of a good lateral view; and although this information might be of little value so far as the operation itself is concerned, it would be of unquestionable assistance in making a prognosis, as the chances of a successful operation on such a sphenoid, if diseased, would be doubtful indeed.

For these reasons, I believe that a lateral view of every case of diseased sphenoid going to operation should be made, and after careful study of the negative, a detailed report of the findings should be sent to the otolaryngologist; or, what would be still better, the negative should be studied by the otolaryngologist and the roentgenologist before the patient goes to operation.

1212 Maison Blanche Building.

ABSTRACT OF DISCUSSION

DR. M. P. BURNHAM, San Francisco: From time to time, roentgen-ray investigation of the sphenoid and ethmoid sinuses is brought into prominence. I think we can state,

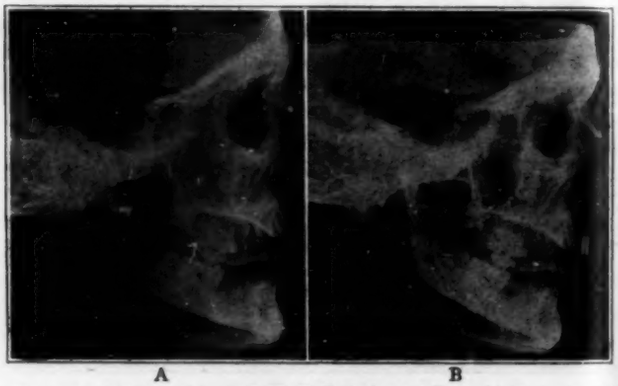


Fig. 15.—Lateral views of Skull F before (*A*) and after (*B*) the removal of adventitious septums of the sphenoid sinus.

however, that up to the present, at least, roentgen-ray studies of either the sphenoid or the ethmoid sinuses have not been of very great value. Dr. Granger's paper, however, is a radical departure from anything that has been done heretofore by roentgenologists. I wish to call attention to two points. The first is the position of the patient's head, which is quite different from the angle at which plates are taken. He has discovered a position which is so radical in its change from any others that it seems to be one that will get us out of our long difficulty in the investigation of these sinuses. Next to that is the angle at which the sinuses are taken. In fact, he uses two angles, both of which are greater than 107 degrees. He has shown to my satisfaction that it is now possible to project the proof of the sphenoid clear of any other anatomic structures so it can be seen readily and repeated plates taken. Heretofore, the plates have been very doubtful, so many structures overlapping that one could not say at all what one was seeing. Dr. Granger has had a small experience clinically with the method, but in his hands it seems to be 100 per cent. perfect. If it proves out, it will be of great advantage in the diagnosis of these cases of sinus trouble.

DR. AMÉDÉE GRANGER, New Orleans: I use a special head rest by means of which the patient's head can be made to rest firmly on the alveolar point and on the glabella without discomfort, at the same time doing away entirely with the tendency of the head to pivot in the direction of either its longitudinal or its transverse diameter when the nose is one of the points on which it rests. Many of our patients are negroes and foreigners, the majority of whom are very

ignorant and afraid of manipulation and instrumentation of any sort. Even under these adverse conditions, satisfactory roentgenograms are made with little or no trouble, and what is much more important and interesting, these roentgenograms made of heads which vary greatly in size and shape are strikingly similar in appearance and all show clearly the positive landmarks described.

THE FALLACY OF SAHLI "DESMOID REACTION".

JACOB BUCKSTEIN, M.D.
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NEW YORK

Various methods have been devised for determining secretory derangements of the stomach, without the use of the stomach tube. One of the most interesting and generally accepted, through the prestige of authority, is the desmoid reaction of Herman Sahli.[1] This test is based on the assertion of Adolf Schmidt that connective tissue is digested only in the stomach, and never in the small intestine. Sahli made use of this, by enclosing pills containing methylene blue in a small piece of rubber tissue, and tying this with catgut. This is swallowed by the patient. If the catgut is digested, the methylene blue is liberated and absorbed. Its

Fig. 1.—The end of the rubber bulb has passed beyond the stomach, into the small intestine. The metal tip is still attached, having been sewed on with catgut.

excretion is noted in the urine. Presumably, this will occur only in the presence of gastric digestion and for no other reason.

If it can be demonstrated that the intestinal secretion also may play a part in the digestion of the catgut, the method loses its value. I have been able repeatedly to demonstrate this fact, as exemplified in the following procedure. Figure 1 represents a rubber tube, the end of which has passed into the small intestine. The metal tip has been sewed on with untreated catgut. Figure 2 represents the condition eighteen hours later. The end of the tube is in the duodenum. The arrow points to

Fig. 2 (eighteen hours later).—The end of the tube is still in the small intestine; but the metal tip has become detached, indicating the disintegration of the catgut. Arrow points to detached metal tip.

the metal tip, which has become detached. The conclusion is that the catgut suture has become digested, permitting the escape of the bulb. In a similar manner, the presumption would appear justified that the catgut ligature of a Sahli "bag," as described above, might similarly, on escaping digestion in the stomach, be affected by the intestinal ferments. In that event, the appearance of methylene blue in the urine would be no criterion as to the effectiveness of gastric digestion, since in part, at least, the small intestine may partake in the process.

1 West Eighty-Fifth Street.

1. Sahli, Herman: Diagnostic Methods of Examination, Eglish translation, edited by N. B. Potter, Philadelphia, W. B. Saunders Company, 1911, p. 433.

Intellectual Weakness and Crime.—States of general intellectual weakness are, beyond question, of great importance in the causation of crime. Mental deficiency, together with natural dulness not amounting to definite deficiency, stands among the commonest of all the major factors. Of the delinquent boys nearly 10 per cent. owe their delinquency primarily to one or other of these conditions; and, in a further 25 per cent., dulness or deficiency appears as a subordinate factor. Nevertheless, the defectives alone form no very large proportion; and the coefficient of association is much higher between crime and educational backwardness than between crime and mere deficiency. Specific intellectual disabilities seem quite unimportant; indeed, they are perhaps as often the consequence as the cause of youthful laxity.—Cyril Burt: *Brit J. M. Psychol.* **3**:28, 1923.

ADAMS-STOKES' SYNDROME, HEART BLOCK, IN ASSOCIATION WITH DIABETES MELLITUS *

HENRY K. MOHLER, M.D.
PHILADELPHIA

Adams-Stokes' syndrome is a term that has been applied to conditions characterized by a slow pulse with transient attacks of vertigo, syncope and epileptiform seizures. These symptoms are due to cerebral anemia induced by the slow action or temporary stoppage of the ventricles. Experiments on animals have confirmed the views held previously by clinicians that convulsions may be produced by a marked lessening or temporary shutting off of the blood supply to the brain.

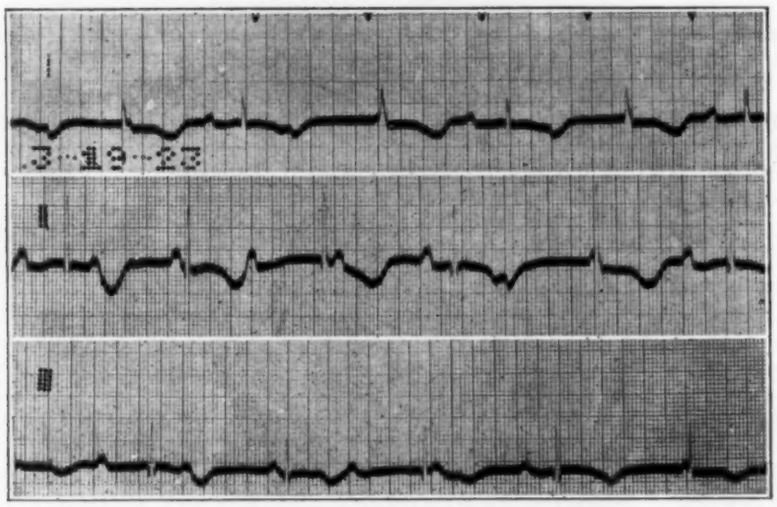

Fig. 1.—Complete heart block, with an auricular rate of 75 a minute and a ventricular rate of 48, March 19, 1923, the day following the occurrence of Adams-Stokes' syndrome.

Adams-Stokes' syndrome and heart block are not synonymous terms, the former being descriptive of a clinical symptom complex, and the latter describing a condition in which there is a partial or complete failure of the auricular impulse to reach the ventricle. Heart block frequently does not present any symptoms.

Adams-Stokes' syndrome is usually associated with some form of heart block. Conditions other than heart block, in which the pulse rate is infrequent, or in which there is temporary cessation of the heart, may cause Adams-Stokes' syndrome.

The frequency of occurrence of Adams-Stokes' syndrome in cases of heart block is not very great, and may occur at two stages:

1. When a complete block develops suddenly, or, during the transitional stage, when a partial block develops into a complete block, either temporarily or permanently. In partial heart block the contraction of the ventricles is dependent on the impulse escaping by way of the auriculoventricular bundle from the auricle. During the transitional periods, that is, when the ventricle no longer receives these impulses from the auricle and before the ventricle has taken on its inherent rhythm, the symptoms of Adams-Stokes' syndrome may become manifest. This explanation is applicable to the greatest number of cases of Adams-Stokes' syndrome. Cardiac syncope is frequent in patients who show high grades of partial block.

2. After complete block has been permanently established and the pulse rate has been reduced to 30 or less. Lewis [1] summarizes the knowledge of the fits of heart block by saying that "in partial heart block they depend on alterations of conductivity and in dissociation their appearance or nonappearance is consequent on the influences which affect the pacemaker of the ventricle. In rare instances this pacemaker may be affected by vagal influences; in others equally rare it is affected by the interpolation of a series of extrasystoles." The rarer instances, when the pacemaker of the ventricle may be affected by vagal influences, will explain the slowing of the pulse in complete block.

Endogenous poisons and the toxins developed during acute infections are capable of stimulating the vagus under these conditions.

ETIOLOGY

Since the greater number of cases of Adams-Stokes' syndrome occur during heart block, the etiology of the syndrome is practically that of the heart block. Heart block occurs more frequently in the male than in the female. It occurs in the young who have had a rheumatic infection of the heart. The elderly

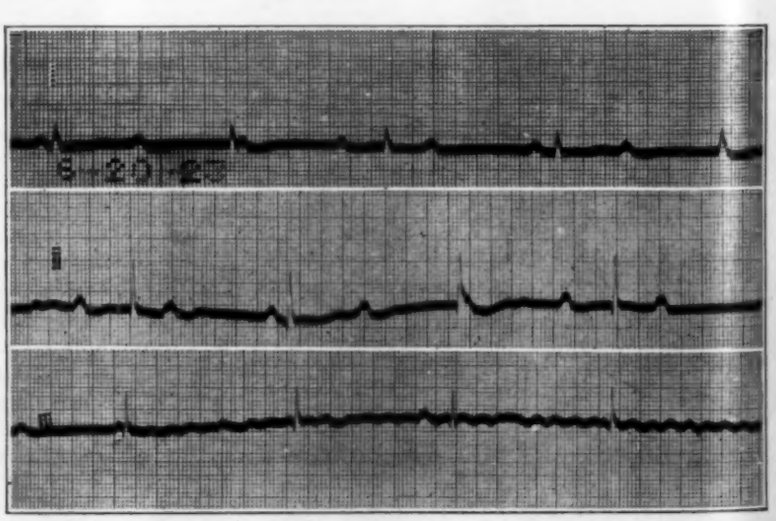

Fig. 2.—Persistence of complete heart block, June 20, 1923, with an auricular rate of 72 and a ventricular rate of 42. The patient is symptom-free and is enjoying good health.

manifest symptoms of the Adams-Stokes' syndrome when there is an association with poisons affecting a damaged myocardium which already has undergone degeneration.

High degrees of heart block have been produced by giving full doses of the digitalis group preparations to patients with already damaged conduction systems.

* From the Department of Medicine, Jefferson Medical College.

1. Lewis, Thomas: The Mechanism and Graphic Registration of the Heart Beat, London, Shaw & Sons, 1920, p. 362.

Many patients with Adams-Stokes' syndrome and heart block give a history of syphilis, arteriosclerosis, chronic interstitial nephritis, overeating or gout. It is highly probably that these conditions, rather than being capable of producing the Adams-Stokes' syndrome, have a common etiology and thus are associated.

Milder degrees of heart block, in which Adams-Stokes' syndrome does occasionally occur, may develop in patients suffering from influenza, tonsillitis, diphtheria and pneumonia.

SYMPTOMATOLOGY

Patients suffering from heart block very frequently are symptom-free, and relatively few develop symptoms of Adams-Stokes' syndrome. Symptoms of valvular or myocardial lesions may be associated with Adams-Stokes' syndrome; the most common of these are dyspnea, palpitation, fatigue, and precordial pain on exertion. In Adams-Stokes' syndrome, the patient usually has no knowledge of an impending attack. During the seizure, consciousness is lost, with twitching of the muscles or even convulsions. The patient may have very frequent attacks. Observations indicate that when the ventricular standstill is greater than from sixteen to eighteen seconds, convulsions occur. Stertorous breathing, with pallor or cyanosis, is usually present during the attack. The convulsions are more often confined to the face and upper limbs. Control of the bowels and bladder is maintained during a seizure, and the tongue is not bitten.

DIAGNOSIS

Adams-Stokes' syndrome is easily recognized; marked infrequency of the pulse rate associated with rapid pulsations in the jugular veins, and the symptoms described furnish a clinical picture which is characteristic and easily diagnosed. The graphic methods, electrocardiographic and polygraphic examinations, yield true information of the conductive system of the heart.

TREATMENT

It is doubtful whether there is any drug known that will be of material help in the treatment of Adams-Stokes' syndrome, except when the disturbance is vagal in origin, in which case atropin sulphate is the drug indicated for use. During the attack the patient may be allowed to inhale oxygen and should be watched so that he does not fall or suffer any injury. Epinephrin, ether, camphor, strychnin, caffein and digitalis have been administered subcutaneously, during the attacks, with doubtful value. Between the attacks, if syphilis is the etiologic factor, antisyphilitic treatment should be used vigorously. Thyroid extract has been used in the intervals between attacks in some cases of Adams-Stokes' syndrome of unknown cause, with variable results.

The use of digitalis is indicated in patients subject to attacks of Adams-Stokes' syndrome if symptoms of failure of the myocardium are present. Complete heart block has been benefited by digitalis judiciously used.

REPORT OF CASE

History.—K. F., a woman, aged 29, married, seen March 16, 1923, complained of increased thirst, polyuria, increased appetite and loss of weight and of strength. The patient was one of nine children. Two sisters died shortly after birth, having been "blue babies." A family history of obesity existed, but none of diabetes mellitus or heart disease was obtainable. The patient had never been very strong. During childhood she had had measles and chickenpox. Four years ago she had had a mild attack of dry pleurisy. No history of rheumatic fever, tonsillitis or chorea was obtainable. The patient "took cold" very readily, which usually developed into attacks of acute bronchitis. She had been married eight years and had not been pregnant. The patient always had been nervous and more or less high strung. For the past thirteen years she had complained of dyspnea on exertion. No other history of symptoms of cardiac decompensation was obtainable. The appetite always had been excellent, more so since the previous December. The bowels were regular. The best weight was 123 pounds (56 kg.) in December, 1922, the patient, since adult life, never having weighed less than 118 pounds (53.5 kg.). Since the attack of acute bronchitis, from which the patient suffered in December, 1922, up to the time of examination, she had lost 16 pounds (7.3 kg.), and her strength had failed. Her appetite and thirst had increased to an abnormal degree. The output of urine and the frequency of voiding had also increased.

March 11, 1923, she voided 5 liters of urine. Three days before this record was made the patient and her family were informed that she had diabetes mellitus.

Examination.—The patient showed signs of having lost in weight, and appeared to be very weak; otherwise the physical examination was negative, except for the fact that there was an odor of acetone on the breath and the tongue was dry and red. There was no pulsation visible in the neck. The apex beat of the heart was palpable 2.5 cm. to the left of the midclavicular line in the fifth interspace. The first sound of the heart was accompanied by a soft systolic murmur, heard faintly in the axilla. The pulse rate was regular, 60 a minute, and the temperature was 98 F. The blood pressure was: systolic, 110; diastolic, 80.

An examination of a single specimen of urine showed a specific gravity of 1.030, with a strongly positive reaction for sugar, diacetic acid and acetone. The Wassermann test was subsequently reported to be negative.

Course.—The patient was advised to go promptly to the hospital for treatment, but her circumstances were such that she had to postpone going for four days. Under these conditions, she was advised not to change her diet except to eliminate all fat. She was cautioned to rest in bed. On the day prior to coming to the hospital, three days after the preceding examination was made, she suffered four epileptiform attacks, occurring at 12:30, 2:30, 4:30 and 7 p. m. The attacks varied from five to ten minutes in duration. The first attack came on while the patient was resting in an easy chair. For twenty-four hours prior to the attack the patient had complained of feeling rather dull and heavy, with an abnormal appetite for cream, which she stated she did not gratify. Immediately prior to each attack, the patient noticed that her eyes became "heavy," in association with numbness in her extremities and generalized "hot flashes."

During the attack the patient was unconscious, and had generalized clonic convulsions, with a moderate degree of cyanosis. The clonic movements were present during approximately the first half of the attack, to recur for brief intervals throughout the latter part of the attack. During these attacks the pulse rate varied from 5 to 8 a minute. The respirations were stertorous in character. There was no frothing at the mouth or biting of the tongue. There was no incontinence of the bowels or of the bladder. The patient felt very much exhausted following the attacks. She vomited after the second seizure and complained of dimness of vision, which remained, to a degree, for two weeks following the day of seizures. During this period the patient was unable to read the print in newspapers.

The symptoms complained of, on the day after the attacks, were weakness, insomnia, slight precordial pains and dimness of vision. The patient was most apprehensive, and lived in constant fear of the recurrence of the convulsions.

Treatment.—The patient was brought to the hospital after the second attack, and laboratory examinations were made of the blood and the urine. These results furnished the evidence for our plan of treatment. It was evident from our examinations and from the laboratory findings that the patient required

prompt treatment for the acidosis complicating the diabetes mellitus, and also for the epileptiform attacks. During the third and fourth attacks, which occurred under our observation in the hospital, the patient was given a hypodermic injection of 1/30 grain of strychnin sulphate and 1/150 grain of atropin sulphate, and oxygen inhalations. To combat the acidosis, she was immediately placed on continuous enteroclysis, consisting of a 5 per cent. solution of glucose and a 1 per cent. solution of sodium bicarbonate in physiologic sodium chlorid solution. One ounce of oatmeal and 4 ounces of skimmed milk were given by mouth every three hours. Atropin sulphate, 1/100 grain, was administered by mouth three times daily for thirteen days, while the patient was confined to bed. Rest in bed for the heart muscle was strongly indicated. The accompanying table shows the plan of further treatment by diet and with insulin, and presents the laboratory findings.

During the examination of the patient three days prior to the occurrence of the epileptiform attacks, I noted a pulse rate of 60. It was decided that in all probability the bradycardia was due to the weakness and the loss of strength and weight through, or only at long intervals and before the ventricle developed its regular independent rhythm.

The possible causes for the development of complete heart block from the partial heart block are: (1) progressive sclerosis as a result of previous respiratory infections affecting primarily or secondarily the endocardium and myocardium; (2) the diabetic condition with the attendant exhaustion and malnutrition, interfering with the proper nutrition of the heart muscle and consequently its impulse conduction system, and (3) the acidosis complicating the diabetic condition which, while not of an extreme degree, may have aggravated an already damaged auriculoventricular conduction system.

The physician attending the patient during her attack of rather severe bronchitis, in December, 1922 (from the effects of which the patient never entirely recovered and from which she dated the beginning of her symptoms of loss of weight and weakness), states that a specimen of a twenty-four hour collection of urine, examined at that time, was negative for sugar. No other symptoms of diabetes were present.

The family history for diabetes mellitus was negative. There was a family history but not a personal history of

Results of Daily Laboratory Examinations, Composition of Diet, Amount of Insulin Used, and Weight During Patient's Stay in Hospital

							24 Hour Diet					Insulin				
Date	C.c. Urine in 24 Hrs.	Percentage Glucose Present	Grams Glucose Excreted in 24 Hrs.	Specific Gravity, Urine	Acetone	Acid, Diacetic	Carbohydrate-Gm.	Protein, Gm.	Fat, Gm.	Percentage of Sugar in Blood	CO_2 Blood, per Cent. by Volume	24 Hour Dosage Units	Intervals	Serial Number	Patient's Weight at 8 p. m.	Total Calories, 24 Hours	Comment
3/19	1,600	1.8	28.8	1.025	+	+	95	62	20	0.31	40	10	Twice	..	?	808	Confined to bed
3/20	1,700	1.5	25.5	1.040	+	—	95	62	20	....	..	10	Twice	..	...	808	Confined to bed
3/21	3,800	2.7	102.6	1.020	+	—	125	62	30	0.29	48	10	Twice	..	...	1,118	Confined to bed
3/22	2,750	0.75	20.6	1.008	+	—	95	62	30	....	..	10	Twice	..	...	898	Confined to bed
3/23	2,800	1.3	36.4	1.015	—	—	95	62	30	0.28	50	10	Twice	..	...	898	Confined to bed
3/24	2,800	0.8	22.4	1.011	—	—	95	62	30	....	..	Discontinued			...	898	Confined to bed
3/25	3,200	Neg.	Neg.	1.012	—	—	52	39	12	....	..	.....			...	472	Confined to bed
3/26	2,500	Neg.	Neg.	QNS	—	—	60	45	40	....	..	.....			...	780	Confined to bed
3/27	2,300	Neg.	Neg.	1.008	—	—	60	45	40	....	..	.....			...	780	Confined to bed
3/28	3,200	Neg.	Neg.	1.009	—	—	70	60	60	....	..	.....			...	1,000	Confined to bed
3/29	2,200	Neg.	Neg.	1.010	—	—	70	60	70	....	..	.....			...	1,150	Confined to bed
3/30	2,900	Neg.	Neg.	1.006	—	—	70	60	95	....	..	.....			...	1,375	Confined to bed
3/31	2,400	Neg.	Neg.	1.010	—	—	76	60	95	....	..	.....			...	1,375	Confined to bed
4/ 1	2,150	Neg.	Neg.	1.008	—	—	76	60	126	....	..	.....			105	1,678	Out of bed
4/ 2	1,920	Neg.	Neg.	QNS	—	—	76	55	126	....	..	.....			...	1,658	Out of bed
4/ 3	2,150	Neg.	Neg.	1.004	—	—	76	57	126	0.125	65	.....			...	1,666	Out of bed
4/ 4	2,920	Neg.	Neg.	1.015	—	—	76	57	126	....	..	.....			105	1,666	Out of bed
4/ 5	2,550	Neg.	Neg.	1.011	—	—	76	57	126	....	..	.....			...	1,666	Out of bed
4/ 6	1,850	Neg.	Neg.	1.004	—	—	76	57	126	....	..	.....			...	1,666	Out of bed
4/ 7	2,100	Neg.	Neg.	1.005	—	—	76	57	126	....	..	.....			106½	1,666	Out of bed
4/ 8	1,830	Neg.	Neg.	1.009	—	—	76	57	126	....	..	.....			...	1,666	Out of bed
4/ 9	1,730	Neg.	Neg.	1.008	—	—	76	57	126	....	..	.....			...	1,666	Out of bed
4/10	1,700	Neg.	Neg.	1.010	—	—	76	57	126	....	..	.....			105	1,666	Out of bed
4/11	1,850	Neg.	Neg.	1.015	—	—	76	57	126	....	..	.....			...	1,666	Out of bed
4/12	1,620	Neg.	Neg.	1.014	—	—	76	57	126	....	..	.....			...	1,666	Out of bed
4/13	1,400	Neg.	Neg.	1.015	—	—	76	57	126	....	..	.....			...	1,666	Discharged from hospital
6/23	1,000	Neg.	Neg.	1.018	—	—	76	57	120	0.11	Last visit to hospital				108	1,882	

of which the patient complained since the attack of bronchitis in December, 1922. The pulse rate of the patient during her stay in the hospital, when not in an attack of Adams-Stokes' syndrome, ranged from 32 to 56, with an average rate of 40 a minute. This latter rate of 40 has been present since the patient's discharge from the hospital. The enlargement of the heart, with mitral systolic murmur transmitted to the axilla, could be accounted for only as the result of chronic endocarditis caused by repeated infections (colds) contracted through the patient's life. The dyspnea on exertion, which had been present for thirteen years, was indicative of impaired cardiac function existing for a number of years. The family history of the death of two sisters as "blue babies" suggested a possibility of congenital heart disease, but could not be verified by the physical findings. The chronic inflammation of the endocardium, especially in the region of the mitral area, may have involved the auriculoventricular bundle and interfered with the conduction of the auriculoventricular impulse, which accounted for the complete heart block (Fig. 1).

A second tracing, showing that complete heart block still existed, April 20, 1923, is shown in Figure 2.

It is now to be assumed that the slow heart rate of 60, present three days prior to the Adams-Stokes' syndrome, was due to a partial heart block; and in the transitional period from the partial to the complete heart block, as explained in this article, the ventricular standstill, or slowing, took place in the intermittent periods when the impulse no longer came

obesity. It would seem that the diabetes was more or less acute in form, with all the cardinal symptoms present. Is it not possible that the injury to the pancreas and heart may have resulted from a common cause; namely, the repeated infections of the respiratory tract? One of the results of the severe attack of acute bronchitis suffered by the patient in December, 1922, was to render the pancreas (the islands of Langerhans) unable to supply the body with sufficient insulin to utilize sufficient carbohydrate to maintain the normal body metabolism.

The patient responded very readily to 10 units of insulin over a period of five days, and subsequent to diet regulation. The acidosis disappeared. She gained in weight and in strength, and the symptoms of diabetes have disappeared.

SUMMARY

This history of a patient with Adams-Stokes' syndrome and heart block indicates that the heart had not functioned normally for a number of years. The onset of the diabetes mellitus dated from the attack of severe bronchitis in December, 1922. The electrocardiograms showed that the patient now had complete heart block, and it is reasonable to assume that the epileptiform attacks were due to the ventricular slowing and standstill occasioned at the periods when the partial heart

block passed into a complete block. The part, if any, that the diabetes played in bringing about this disturbance is not definitely known. The failure of the auriculoventricular bundle to transmit impulses in this case may have been due to any one, or a combination, of the following causes: (1) the toxic effects of the acidosis on the auriculoventricular bundle; (2) the effects of the generalized malnutrition accompanying the diabetes mellitus with its resultant effects on the bundle, or (3) the progressive sclerotic changes in the heart muscle as a result of the repeated superimposed infections on a chronic endocarditis.

The patient made an excellent recovery by the regulation of diet, the use of insulin, and rest.

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NEONATAL MORTALITY ASSOCIATED WITH SYPHILIS AND OTHER MATERNAL INFECTIONS *

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My purpose is to estimate the relative incidence of various maternal infections associated with fetal death, and to discuss the possible utilization of such information to improve the routine care of pregnant patients in the prenatal clinic.

This report of our experience at Stanford is probably a fair presentation of what is being done in the average women's clinic to reduce fetal mortality. Also, as in similar institutions, our work is restricted and in many phases incomplete, owing to an inadequate budget.

About 1,000 new patients are treated each year in the Stanford Women's Clinic, with a total annual attendance that varies from 6,000 to 8,000 visits. The pregnant patients are segregated and given special care in the prenatal clinic. The clinic cooperates not only with the routine and special laboratories of the medical school, and with special departments, such as roentgen-ray and hydrotherapy, but also with the social service department. In conjunction with the social service department, instruction is given in prenatal care to both

TABLE 1.—*Routine Wassermann Reports: Hospital Obstetrics*

Year	Number of Diagnoses	Negative	Positive	Per Cent. Positive
1919	289	280	9	3.1
1920	297	287	10	3.3
1921	243	232	11	4.5
1922	217	208	9	4.1
1923 (6 months)	107	103	4	3.7
Total	1,153	1,110	43	3.7

graduate and undergraduate medical students. Graduate nurses and nurses in training are given instruction in the outpatient obstetric service, while plans are being formulated by the social service department for the utilization of the prenatal clinic as part of the training of public health nurses and social service workers. For these reasons, every effort has been made to ascertain practical facts on which to base a rational routine for the care of the pregnant patient. This information is used, moreover, not only to determine measures for the prevention of infant mortality, but also to train students and nurses whose future life is to be devoted to such service.

The placenta and cord of every baby born in the hospital in the series covered by this report have been studied microscopically, as well as all tissue removed at operation, such as the appendix, uterus, tube, ovary and curettings. A Wassermann test has been made as a routine since 1919 of all patients registering in the women's clinic. A summary of the Wassermann reports of patients entering the hospital from the clinic is given in Tables 1, 2 and 3. Because of lack of funds and for other practical reasons, the testing of the father's blood has been negligible; and because of lack of funds, the testing of the new-born baby's blood has been given up unless for some clinical reason such a test seems to be indicated. Fifty-three and five-tenths per cent. of the babies who died at term or in the later months of pregnancy have been examined post mortem

TABLE 2.—*Routine Wassermann Reports: Abortion and Ectopic Pregnancy*

	Abortion				Ectopic Pregnancy			
	No. of Diagnoses			Per Cent.	No. of Diagnoses			Per Cent.
Year	Total	Negative	Positive	Positive	Total	Negative	Positive	Positive
1919	26	22	4	15.3	2	2	0	0.0
1920	16	16	0	0.0	6	5	1	16.6
1921	16	15	1	6.2	2	2	0	0.0
1922	21	18	3	14.2	3	3	0	0.0
1923 (6 mos.)	16	16	0	0.0	0	0	0	0.0
Total	95	87	8	8.4	13	12	1	7.7

TABLE 3.—*Routine Wassermann Reports: Hospital Gynecology*

Year	Number of Diagnoses	Negative	Positive	Per Cent. Positive
1919	191	177	14	7.3
1920	196	185	11	5.6
1921	174	161	13	7.4
1922	217	199	18	8.2
1923 (6 months)	104	100	4	3.8
Total	882	822	60	6.6

by the department of pathology, and particular attention has been given to pathologic lesions suggesting fetal syphilis, although only a few have been studied for spirochetes. Unfortunately, because of lack of funds, very little investigation has so far been made of the earlier embryos. For these reasons the incidence of fetal syphilis is probably more underestimated than overestimated in the present investigation. In the clinic, fairly complete bacteriologic study has been made of all secretions from Skene's and Bartholin's glands as well as from the cervix in patients with leukorrhea, thanks to the grant of funds by the government during the war period; but for the past year this work has been greatly handicapped because of the action of Congress in withdrawing funds for the study of the prevention and treatment of venereal disease.

The histories of 1,934 consecutive pregnancies in women admitted either to the obstetric or to the gynecologic wards of Lane Hospital have been reviewed, and a detailed study has been made of 335 fetal deaths occurring in this group. The group of pregnancies includes 1,762 patients delivered in the obstetric ward, together with twenty-five patients with extra-uterine

* Read before the joint meeting of the Section on Diseases of Children and the Section on Preventive Medicine and Public Health at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

pregnancy and 147 patients with abortion treated in the gynecologic ward.

This gives a gross fetal mortality of 17 per cent., which at first glance may seem exceptionally high. The reason for this is that very few complete fetal mortality statistics can be found in the literature, and the usual report states merely what occurs with the viable child; that is, in pregnancies advanced to at least the seventh month. The reported mortality for such a group is about 7 per cent. For instance, Williams, in 1915, reported 705, or 7 per cent., fetal deaths in 10,000 confinements occurring in the indoor and outdoor service of the Johns Hopkins Hospital; but all the babies weighed more than 1,500 gm., and were delivered some time after the seventh month of pregnancy.

TABLE 4.—*Causes of Fetal Death in Healthy Mothers, from One to Sixteen Weeks*

Criminal abortion	32
Spontaneous abortion (cause ?)	29
Retroverted uterus	8
Accidental (operation)	3
Ectopic pregnancy	2
Laceration of cervix	2
Fibroid of uterus	1
Placenta praevia	1
Previous operation	1
Total mortality	79

TABLE 5.—*Causes of Fetal Death in Healthy Mothers, from Sixteen to Twenty-Eight Weeks*

Spontaneous abortion (cause ?)	5
Hydatidiform mole	2
Prolapsed cord	2
Postpartum death (cause ?)	2
Retroverted uterus	1
Accidental (operation)	1
Fibroid of uterus	1
Placenta praevia	1
Carcinoma of breast	1
Hemorrhage ante partum	1
Amputation of cervix	1
Automobile ride	1
Total mortality	19

TABLE 6.—*Causes of Fetal Death in Healthy Mothers, from Twenty-Eight Weeks to Term*

Spontaneous delivery (cause ?)	3
Placenta praevia	3
Prolapsed cord	2
Macerated	2
Hemorrhage ante partum	1
Hypertension	1
Hydramnios	1
Brain hemorrhage	1
Total mortality	14

With the pregnancies discussed in this paper, 181 fetal deaths occurred in the first sixteen weeks; thirty-nine from the sixteenth to the twenty-eighth week; sixty from the twenty-eighth week to term, and fifty-five died at term or during the time post partum that the mother remained in the hospital. This gives a fetal mortality for the obstetric ward of 6.5 per cent., which corresponds closely to Williams' statistics. However, this figure states only a little more than one-third the total fetal mortality for the entire period of pregnancy that is reported in the present investigation.

Of the 335 fetal deaths, 131 infants were delivered from healthy mothers, while the histories of 204 patients, or 60 per cent., showed that the mothers at the time of delivery were suffering from some form of either local or general infection.

The causes of fetal death in the group of 131 healthy mothers is given in Tables 4, 5, 6 and 7. These tables show that, aside from infections, the most frequent danger to the fetus during the first sixteen weeks is criminal abortion (thirty-two fetal deaths). Moreover, while it is possible that, in spite of the routine study of curettings, some cases of cystic degeneration of the chorion have been undiagnosed, it is nevertheless probable that criminal abortion, automobiling, coitus and uterine displacements were instrumental in producing many of the additional twenty-nine fetal deaths designated as spontaneous abortions. As the present paper is limited to a discussion of maternal infections, no attempt has been made to estimate the total incidence of pelvic contraction, although in Table 7 can be found the number of fetal deaths associated with operations (seven fetal deaths).

TABLE 7.—*Causes of Fetal Death in Healthy Mothers, from Term to First Fourteen Days Post Partum*

Forceps delivery	4
Version	4
Spontaneous delivery (cause ?)	2
Breech	2
Placenta praevia	1
Prolapsed cord	1
Craniotomy	1
Rigid cervix	1
Overdue	1
Monster	1
Fetal intestinal obstruction	1
Total mortality	19

Table 8 gives the number of maternal infections, with the percentage of relative incidence, noted in 101 records of fetal death from the first to the sixteenth week. Sixty-eight per cent. of the fatalities occurred with patients suffering with some form of pelvic inflammatory disease, including eleven cases that were found to be complicated with chronic appendicitis, as proved by laboratory findings. Chronic appendicitis has undoubtedly influenced to some extent the number of ectopic pregnancies (twenty-three in this group). The epidemic of influenza, the need for therapeutic abortion with patients suffering with tuberculosis, and patients showing positive Wassermann reactions, each accounted for approximately 10 per cent. of the deaths. A very minor number had either nephritis, endocarditis or pyelitis.

TABLE 8.—*Fetal Mortalities with Maternal Infections, from One to Sixteen Weeks*

	Complications							Totals		
Infections	Pelvic Inflammatory Disease*	Syphilis	Nephritis	Influenza	Tuberculosis	Endocarditis	Pyelitis	Complicated†	Uncomplicated	Mortalities
Pelvic inflammatory*	..	5	6	2	1	4	2	13	55	68
Syphilis	..	..	1	1	..	..	..	2	7	9
Tuberculosis	1	..	..	1	..	..	..	2	8	10
Pyelitis	..	..	..	..	..	..	..	0	1	1
Influenza	..	..	..	..	..	..	..	0	11	11
Endocarditis	..	..	..	..	..	..	..	0	1	1
Nephritis	..	..	..	..	..	..	..	0	1	1
Infections	1	5	7	4	1	4	2	17	84	101
Mortalities	68	9	1	11	10	1	1	..	..	..
Totals	69	14	8	15	11	5	3	..	..	..
Percentages	68.3	13.8	7.9	14.8	10.9	4.9	2.9	..	..	..

* Including appendicitis and gonorrhea.

† The number designated as complicated is less than the totals on the same line, owing to the fact that some were multiple infections.

Table 9 shows the incidence of maternal infections among twenty fetal deaths occurring from the sixteenth to the twenty-eighth week. Of these patients, more than half suffered from syphilis, 20 per cent. from nephritis,[1] and the remaining deaths occurred among patients with pelvic inflammatory disease, influenza or tuberculosis.

Table 10 gives the incidence of maternal infection with forty-six fetal deaths occurring from the twenty-eighth week to term, and here we find a much larger incidence of syphilis, nearly 70 per cent.; 21 per cent. with nephritis, and a small group of patients suffering with pelvic inflammatory disease, influenza, endocarditis, or appendicitis.

Table 11, with thirty-seven fetal deaths occurring at term or during their postpartum stay in the hospital, shows that among these thirty-seven fetal deaths syphilis still has a majority incidence; namelyfi 67.5 per cent. Nephritis gives 16 per cent., while the remaining histories show that patients suffered from appendicitis, pelvic inflammatory disease, influenza, pyelitis, endocarditis or tuberculosis.

TABLE 9.—*Fetal Mortalities with Maternal Infections, from Sixteen to Twenty-Eight Weeks*

Infections	Complications							Totals		
	Pelvic Inflammatory Disease*	Syphilis	Nephritis	Influenza	Tuberculosis	Endocarditis	Pyelitis	Complicated	Uncomplicated	Mortalities
Syphilis	3	..	..	..	..	1	..	4	7	11
Nephritis	1	..	..	..	..	..	..	1	3	4
Pelvic inflammatory*	..	..	..	..	..	..	..	0	1	1
Influenza	1	..	..	..	..	..	..	1	1	2
Tuberculosis	..	..	..	..	..	..	..	0	2	2
Infections	5	..	..	..	..	1	..	6	14	20
Mortalities	1	11	4	2	2	0	0	..	..	..
Totals	6	11	4	2	2	1	0	..	..	..
Percentages	30.0	55.0	20.0	10.0	10.0	5.0	0.0	..	..	..

* Including appendicitis and gonorrhea.

In studying the relative incidence of maternal infections as found among the 204 fetal deaths, Table 12 shows that eighty-eight, or 43 per cent., were associated with pelvic inflammatory disease or appendicitis; eighty-two, or 40 per cent., with syphilis, and twenty-eight, or 13.5 per cent., with chronic nephritis, while the remainder were associated with influenza, tuberculosis, endocarditis or pyelitis.

These figures, I believe, present new facts that are at present not to be found in the American literature, because they can be obtained only in those few American clinics where obstetrics and gynecology are combined under one head. They are worth considering, in that they may point the way to more practical methods for conserving fetal life among patients who attend prenatal clinics or who are under the care of regular physicians.

Prenatal clinics will not necessarily always be located in teaching centers, but probably will be extended so as to meet the needs of all pregnant women, even in remote rural districts. That they have proved of value in the past and that there is need for extending the service rendered by physicians and public health nurses, with the aid of public health laboratories in a similar way, is evidenced by the fact that the national government and many state governments have recently passed laws for their financial support. The tables included in this paper demonstrate to me that the welfare of the unborn child is of greater moment than even the extensive baby welfare work carried on at present for the conservation of the health of the born child.

1. Throughout the paper, pregnancy nephrosis is included with chronic nephritis.

TABLE 10.—*Fetal Mortalities with Maternal Infections, from Twenty-Eight Weeks to Term*

Infections	Complications							Totals		
	Pelvic Inflammatory Disease*	Syphilis	Nephritis	Influenza	Tuberculosis	Endocarditis	Pyelitis	Complicated†	Uncomplicated	Mortalities
Syphilis	4	..	2	1	3	1	2	10	22	32
Nephritis	..	..	..	1	..	3	..	4	4	8
Pelvic inflammatory*	..	..	..	..	..	..	..	0	3	3
Influenza	..	..	..	..	..	..	..	0	2	2
Endocarditis	..	..	..	..	..	..	..	0	1	1
Infections	4	0	2	2	3	4	2	14	32	46
Mortalities	3	32	8	2	0	1	0	..	..	..
Totals	7	32	10	4	3	5	2	..	..	..
Percentages	15.2	69.5	21.7	8.6	6.5	10.8	4.3	..	..	..

* Including appendicitis and gonorrhea.
† The number designated as complicated is less than the totals on the same line, owing to the fact that some were multiple infections.

Before discussing the possibilities of treatment of the various maternal infections associated with pregnancy, something should be said of the methods of diagnosis that have been utilized in regard to syphilis.

DIAGNOSIS IN SYPHILIS

The literature on the occurrence of syphilis is confusing. A review of this literature leaves the reader in doubt as to whether the actual incidence ranges somewhere around 10 per cent. or is more than twice this amount.

In the study of 1,153 pregnant patients entering Lane Hospital in whom the Wassermann test was made of each patient, there were forty-three positive reports, or an incidence of 3.7 per cent. (Table 1). This agrees with the reports of Johns Hopkins Hospital and of several other women's clinics, but is less than that reported by Commiskey. He found, in the routine examination of 1,822 pregnant patients in the obstetric clinic of Kings County Hospital, New York, an incidence of 8 per cent. positive Wassermann reactions.

TABLE 11.—*Fetal Mortalities with Maternal Infections, from Term to First Fourteen Days Post Partum*

Infections	Complications							Totals		
	Pelvic Inflammatory Disease*	Syphilis	Nephritis	Influenza	Tuberculosis	Endocarditis	Pyelitis	Complicated†	Uncomplicated	Mortalities
Syphilis	3	..	1	1	1	..	..	4	21	25
Nephritis	..	..	..	..	..	1	..	1	4	5
Pelvic inflammatory*	..	..	..	..	..	..	..	0	3	3
Influenza	..	..	..	..	..	..	..	0	1	1
Pyelitis	..	..	..	..	..	..	..	0	1	1
Endocarditis	..	..	..	..	..	..	..	0	1	1
Tuberculosis	..	..	..	..	..	..	..	0	1	1
Infections	3	0	1	1	1	1	0	5	32	37
Mortalities	3	25	5	1	1	1	1	..	..	..
Totals	6	25	6	2	2	2	1	..	..	..
Percentages	16.2	67.5	16.2	5.4	5.4	5.4	2.7	..	..	..

* Including appendicitis and gonorrhea.
† The number designated as complicated is less than the totals on the same line, owing to the fact that some were multiple infections.

That this incidence varies with different groups of patients is shown in Table 2. In this table, with ninety-five patients with abortion, eight, or 8.4 per cent., were found to have positive Wassermann reactions. With thirteen extra-uterine pregnancies there was one positive Wassermann reaction, or 7.7 per cent.

With 882 patients examined as a routine in the gynecologic ward, sixty were found to have positive Wassermann reactions, or an incidence of 6.6 per cent. (Table 3).

TABLE 12.—*Relative Incidence of Maternal Infections in Two Hundred and Four Fetal Mortalities**

Infections	1 to 16 Weeks	16 to 28 Weeks	28 Weeks to Term	Term to 1st 14 da. p. p.	Total	Percentage
Pelvic inflammatory†	69	6	7	6	88	43.1
Syphilis	14	11	32	25	82	40.1
Nephritis	8	4	10	6	28	13.7
Influenza	15	2	4	2	23	11.2
Tuberculosis	11	2	3	2	18	8.8
Endocarditis	5	1	5	2	13	6.3
Pyelitis	3	0	2	1	6	2.9

* These figures total more than 204 because some patients suffered from multiple infections.
† Including appendicitis and gonorrhea.

This percentage of positive Wassermann reactions does not by any means express the total number of patients suffering with syphilis that have been confined in the hospital, as can be seen by a study of the placental pathology and the necropsy reports of babies dying either before or at full term. Unfortunately, these methods have been of no aid in the early months of pregnancy, because the placenta does not show the characteristic lesions so early, and no extensive studies were made of the embryos. With sixty-eight fetal mortalities due to syphilis between the sixteenth week and term, it will be noted in Table 13 that only twenty, or less than one third, give a positive Wassermann report with the mother. Not all the mothers in this group, however, were tested, and a much smaller number of the fathers were examined, while only very few of the babies received a Wassermann test. The reason for this is that it is very difficult to have the staff obtain the blood from the father, as he does not appear in the clinic until after the baby is born, and practically none of the babies born dead had a Wassermann test of the blood.

On the other hand, with every baby born in the series of 1,762 pregnancies, the placenta was studied microscopically after delivery. For the first sixteen weeks we have not attempted to diagnose syphilitic changes from the microscopic picture, but after the sixteenth week it has been possible with greater ease to note what has come to be recognized as histologic changes due to syphilis. From this study, the diagnosis of syphilis has been made more frequently than on the maternal Wassermann report. Again, from the study of the fetus by necropsy, while it is true that only 53.5 per cent. of the babies dying after the twenty-eighth week have been examined postmortem and very few have been examined for spirochetes, still the anatomic changes in the joints of the child, the lung, the liver and the pancreas are well recognized diagnostic facts, and from these facts the pathologic department has aided us in recognizing forty of the sixty-eight syphilitic deaths occurring after the sixteenth week. In many instances the diagnosis was made positive by all three findings; that is, by a positive Wassermann reaction in the mother, by the placenta, and by necropsy.

The incidence of toxemia of pregnancy in this group of fetal deaths is very high. Twenty-five patients, or 12 per cent., suffered with preeclamptic toxemia, while two patients showed signs of diabetes.

TREATMENT OF MATERNAL INFECTIONS

In discussing the treatment of patients suffering with infection, very little can be said in this paper, because this investigation is intended merely to call attention to the incidence of maternal infection and to give the number of deaths associated with such infections. In order to arrive at a proper understanding of what has been done in the treatment of patients suffering from the various infections, a more comprehensive study of the obstetric material would be necessary, which has not been done to the present time.

It is interesting to note, however, that of the 204 fetal deaths, of which eighty-two were due to syphilis, only ten of the mothers were treated with arsphenamin previous to delivery, the reason for this being that the diagnosis was not made until after delivery and the placenta and body of the dead child had been studied. On the other hand, forty-two patients (exclusive of abortions and extra-uterine pregnancies) were treated by operation. In this group of forty-two operations there were seven abdominal and three vaginal cesarean sections that failed to preserve the life of the child. Furthermore, because of the seriousness of the maternal infection, particularly in influenza and tuberculosis, fifteen of the fetal deaths were due to therapeutic abortion.

These figures demonstrate to me the error of hoping to reduce very materially the number of fetal deaths by treatment of the mother during pregnancy, either by medication or by operation. The prenatal clinic must be preceded by an adolescent clinic, and preventive treatment of the future patient begun many years before pregnancy occurs. This is particularly true in regard to the incidence of venereal disease. To hope to save the unborn child located in the tube inflamed by a previous gonorrhea is useless, and to hope to save the child when the mother or father is suffering from syphilis is far from being ideal. Aside from the recognition and prompt treatment of acute appendicitis during the period of adolescence, there is no problem so great in the study of the prevention of infant mortality as is the problem for the prevention of the spread of venereal disease during adolescence, the cure of the prospective father before marriage, and the protection of the mother from the ravages of venereal disease before she undertakes the problem of motherhood.

TABLE 13.—*Method of Diagnosing Syphilis*

	Positive Diagnoses						
	Wassermann			Pathology			
	Mother	Father	Baby	Placenta	Cord	Necropsy	Total Mortalities Due to Syphilis
From 1 to 16 weeks	13	5	0	..	..	..	14
From 16 to 28 weeks	9	2	0	7	..	2	11
From 28 weeks to term	8	5	0	15	3	19	32
Term to first 14 days postpartum	3	2	3	7	4	19	25
Totals	33	14	3	29	7	40	82

INFANT MORTALITY IN THE FIRST MONTH OF LIFE

BIRTH INJURIES, CONGENITAL ANOMALIES AND HEMORRHAGE *

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It is difficult to obtain accurate statistics concerning the relative frequency of occurrence of birth injuries, congenital anomalies and hemorrhage as causes of early infant mortality. The International List of Causes of Death, to which the Census Bureau conforms, is notable for its omission of many important causes which are generally, if not peculiarly, responsible for infant deaths in the first month after birth.[1] For example, birth injury from forceps is mentioned, but from other causes is ignored. Spontaneous hemorrhage, except umbilical, and sepsis of the new-born, are not spoken of.

Confusion is caused by the fact that many of the titles are symptoms of one or more specific conditions and not primary causes of death. In the classification of causes of deaths in infants during the first month, asphyxia, atelectasis, asthenia, general debility, and paralysis and convulsions are symptoms commonly

TABLE 1.—*Infant Deaths Under One Month from Certain Causes in the District of Columbia, 1922, Compared with Columbia Hospital Statistics, 1922*

	District of Columbia, 9,121 Live Births			Columbia Hospital, 1,388 Live Births		
	No. of Deaths	Per Cent. of Total	Rate per 1,000 Births	No. of Deaths	Per Cent. of Total	Rate per 1,000 Births
All Causes	429	100.0	47	53	100.0	31
Hemorrhage	22	5.1	2.4	11	20.7	7.9
Congenital deformities	33	7.6	3.6	4	7.5	2.8
Birth injuries	29	6.7	3.2	5	9.4	3.6

found in birth injury, intracranial or intraspinal hemorrhage, and pneumonia of the new-born.

In the 1920 census report, 2,145 deaths of children under 1 month of age out of a total of 62,635 were designated as caused by "unknown or ill defined diseases"—3.5 per cent. of the total deaths in the first month of life.

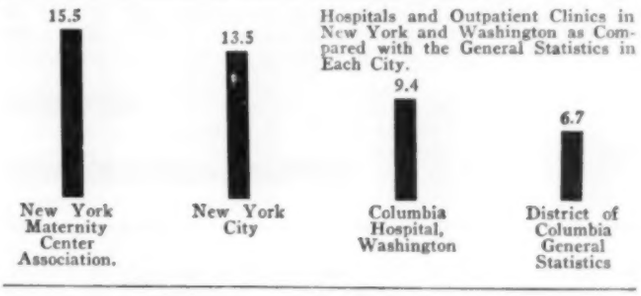
Since our general statistics as now classified are not specific enough, I attempted to compare the causes of death under 1 month of age at Columbia Hospital, a Class A maternity hospital in the District of Columbia, with figures for the general population of Washington for the year 1922 (Table 1). I was enabled to carry out this purpose through the cooperation of the hospital and of the health department of the District of Columbia. Certain differences stand out between the figures of the hospital and of the community as given in this table.

BIRTH INJURIES

Hospital statistics usually record a higher ratio of birth injuries as a cause of death than the community statistics. Columbia Hospital gives 9.4 per cent. of all deaths as due to this, while the community as a whole shows 6.7 per cent. The Maternity Center Association of New York places about half of its mothers in hospitals. The association records 15.5 per cent. of all deaths in the first month (1919-1921) as due to difficult labor, while the general community figures show 13.5 per cent. This is a high rate, and under a stricter classification of causes might be still higher (Table 2).

Dr. Louis Dublin, statistician of the Metropolitan Life Insurance Company, being anxious to evaluate

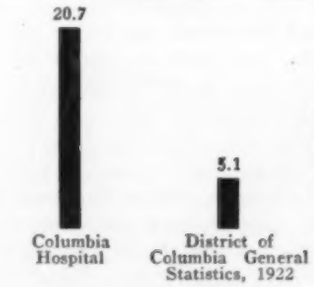
TABLE 2.—*Deaths from Birth Injuries per Hundred Infants Dying in First Month*



Hospitals and Outpatient Clinics in New York and Washington as Compared with the General Statistics in Each City.

benefits derived from prenatal care in the prevention of early infant mortality, studied, comparatively, the figures of the New York Maternity Center Association, and the figures of the general population of New York City. As a result, he found savings in the rates for prematurity, malformation, diarrhea and enteritis, but not for syphilis, congenital debility, and *birth injuries*. It is interesting to note that Dr. Dublin's findings are relatively almost identical with those in the District of Columbia, being, respectively, 3.2 and 3.6 in Washington, as compared with 4.7 for the general and 4 for the Maternity Center statistics in New York. Prenatal care evidently does not diminish the number of birth injuries. Dr. Dublin[2] says: "The benefits resulting

TABLE 3.—*Deaths Charged to Spontaneous and Intracranial Hemorrhage in the General Population, Contrasted with Hospital Statistics of District of Columbia, 1922*



Constituting in Columbia Hospital 20.7 per cent. and in the general population 5.1 per cent. of all causes of deaths in infants during the first month of life.

from good prenatal work were lost through the breakdown of the obstetrical service. This accounts for the unsatisfactory results in the rate from dystocia as a factor in early infant mortality."

HEMORRHAGE

Hemorrhage (*a*) of spontaneous type, or (*b*) due to injury, or (*c*) the perhaps more common type in which both factors are concerned, or (*d*) accompanying asphyxia, is a cause of death the importance of which seems not well recognized. Visible hemorrhage,

* Read before the joint meeting of the Section on Diseases of Children and the Section on Preventive Medicine and Public Health at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. The International List of Causes of Death, under "Malformations and Diseases of Early Infancy" (X and XI), reads: 150. Congenital malformations; congenital hydrocephalus; congenital malformation of heart; spina bifida. 151. Congenital debility, icterus and sclerema; premature birth, atrophy, marasmus, inanition. 152. Umbilical hemorrhage; atelectasis; injury by forceps at birth. 153. Lack of care.

2. Dublin, L. J.: Tr. Am. Child Hyg. A., 1922, p. 91.

such as that from the umbilicus, or stomach or bowel is always recognizable; the occult hemorrhage occurring within the cranial cavity may go undiagnosed. But its influence seems to be well understood at Columbia Hospital, for the hospital charges 20.7 per cent. of all deaths in the first month to hemorrhage, including intracranial hemorrhage. Contrast this with the figures for the community of 5.1 per cent. (Table 3). Hemorrhage, and intracranial hemorrhage, especially, seems either to occur, or to be diagnosed, more frequently in

TABLE 4.—*Registration Area Statistics, 1920, and Necropsy Reports on Congenital Deformities*

Montreal General Hospital	1 as cause of death in 204 children, all examined at necropsy (78 per cent. under 3 months of age). Average, 0.5 per cent. of all deaths.	
Sloane Hospital	12 out of 291 deaths (about 50 per cent. examined at necropsy). Average, 4.1 per cent. of all deaths.	
Census Bureau	Report Registration Area, 1920, 11.6 per cent. of all deaths.	

the hospital than in the community at large.[3] A fairly large literature has accumulated concerning the hemorrhagic tendency of the new-born as a cause of intracranial hemorrhage, and the treatment of this condition by means of hemostatic therapy, since 1918, when I called attention to the relationship between the two conditions.[4] Numerous necropsy records are now available, of which the most recent figures are from Warwick,[5] who found evidence of intracranial hemorrhage in 46 per cent. of 136 selected infants dying within the first week of life, although some of these doubtless were small lesions, not capable of causing death. Several other observers have reported from 40 to 60 per cent. during the same period. Certain hospitals report intracranial hemorrhage as birth injuries; the incidence, however, under any classification in community or hospital, does not approach the necropsy ratio.

Excepting in the extensive and purely traumatic cases, early diagnosis, and prompt transfusion, or subcutaneous injection of whole blood, should reduce the death rate from intracranial hemorrhage.

CONGENITAL MALFORMATION

Congenital deformities in the general community of the District of Columbia are charged with 7.6 per cent. of all deaths within the first month of life, and in Columbia Hospital with 7.5 per cent. In the general community, 66.6 per cent. of these malformations are heart lesions, and of one variety only, patent foramen ovale. In the hospital, 50 per cent. of fatal malformations are charged to anomalies of the heart, patent foramen ovale being also the only variety mentioned.[6] The figures of the Census Bureau for 1920 charge 66.6 per cent. of 12,229 deaths due to congenital anomalies to congenital heart diseases. This is the same percentage rate as that of the District of Columbia. It would be interesting, if it were possible, to see how many of these were attributed to patent foramen ovale.

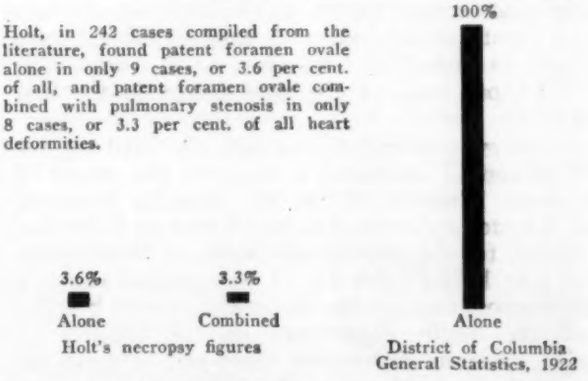
We are informed by the statisticians that the death rate from malformations grows less as the community or state acquires age in the registration area, which means experience in collecting and interpreting statistics. The rate varies according to environmental changes even among groups in the same community; thus, in New York City the rate in 1920 was 10 per cent. of all deaths in the first year of life, while in infants delivered through the Maternity Center Associations it was 6.3 per cent.[2] The etiology of malformations is little understood; but it is believed, despite theories as to injury, infection, amniotic occlusion, etc., that they are in most instances transmitted according to the mendelian laws of heredity, through characteristics inherent in the chromosomes, or at least in the germ plasma. It is difficult, therefore, to accept as accurate statistics which would indicate that environmental changes occurring in the course of a year or so, or even in the same year, could reduce the actual number of the malformations in new-born infants to any considerable degree. It would be more logical to believe that the statistics concerning these deformities, rather than the infants themselves, are changed by improved conditions.

Two alleged facts in the statistical tables seem open to question; that (1) 11.5 per cent. of all deaths in the first month of life (which are the figures for the registration area) are due to congenital malformations, and (2) the greater number of these, being fatal anomalies of the heart (100 per cent. in the District of Columbia), are due to patent foramen ovale.

Routine necropsy findings show a much lower rate of occurrence of fatal deformities than 11.5 per cent. in the first month or months of life (Table 4). McCrae,[7] at the Montreal General Hospital, did complete necropsies on 204 children, 87 per cent. of whom were under 3 months of age, and only four children over 1 year of age. He found a number of anomalies, such as transposition of organs and circulatory defects, but in only one case was the heart lesion the primary cause of death. In all extensive visceral anomalies, cardiac deformities also were found. One child, 49 days old, suffering from pulmonary atresia, hypoplasia of the pulmonary ventricle and patent foramen ovale with almost all the viscera transposed, died of pneumonia. Another with transposed viscera, and patency of both

TABLE 5.—*Frequency of Patent Foramen Ovale Among Congenital Heart Deformities as Shown in Necropsies*

Holt, in 242 cases compiled from the literature, found patent foramen ovale alone in only 9 cases, or 3.6 per cent. of all, and patent foramen ovale combined with pulmonary stenosis in only 8 cases, or 3.3 per cent. of all heart deformities.



3. Warwick, Schwartz, Holland and others have found in routine necropsies evidences of intracranial hemorrhage in from 40 to 60 per cent. of all infants born dead or dying during the first month. Cyanosis and atelectasis usually accompany this condition.

4. Foote, J. A.: Discussion on Brady, J. M.: Lumbar Puncture in Meningeal Hemorrhage of the New-Born, J. A. M. A. **71**: 347 (Aug. 3) 1918.

5. Warwick, M., quoted by Ehrenfest: Birth Injuries of the Child, New York, 1922, p. 45.

6. Preponderance of congenital heart lesions among congenital anomalies, in general, as compared with hospital, statistics, 1922: In general population, District of Columbia, 1922: patent foramen ovale, twenty-one out of thirty-three anomalies. Columbia Hospital, District of Columbia, 1922: patent foramen ovale, two out of four anomalies.

7. McCrae, J.: Montreal M. J. **38**: 586-595, 1909.

septums, died probably of the deformity. Another with multiple heart anomalies, and the liver and gallbladder transposed, died from pleurisy and lung abscess following pneumonia. Marked patent foramen ovale as a deformity, but not as a cause of death, was found in only two cases out of 204. Only one death in 204 was directly chargeable to a deformity, or about 0.5 per cent. Among 10,000 consecutive births at Sloane Hospital, reported by Holt and Babbitt,[8] twelve malformations occurred out of 291 deaths, or 4.1 per cent. of all deaths. These figures, ranging from 0.5 to 4.1 per cent., would indicate that the general rate of 11.5 per cent. among all causes of death in the first month is open to question. Pneumonia, in the Sloane and Montreal General Hospital necropsy series, was, after congenital weakness or prematurity, and accidents of labor, the most frequent cause of death.

As to the frequency of occurrence of fatal cardiac malformations as a cause of death, and particularly of patent foramen ovale, as a cause of death, Holt[9] compiled reports of 242 cases of congenital heart disease, and found patent foramen ovale alone in only nine cases, and associated with pulmonary stenosis in only eight cases. This would be a percentage among all cardiac anomalies of patent foramen ovale alone of 3.7 per cent., and complicated, of 3.3 per cent.—an extreme variation from the 100 per cent. in 1922 in the District of Columbia.

Birnbaum,[10] in the Göttingen obstetric clinic, found four cases of fatal congenital heart disease among 4,200 births. McCullough, Pohlman, Vierordt[11] and many other authorities believe that patency of the foramen ovale, even when marked, is rarely a primary cause of death. Hemenway[12] said recently, "It is in the opinion of the writer very doubtful if patent foramen ovale is ever directly or indirectly a cause of death."

Intermittent cyanosis in infants is probably more frequently due to other causes than to cardiac lesions. It is almost always present in the atypical pneumonia of the new-born and in intracranial hemorrhage. But many diagnoses of congenital heart malformation are made on this symptom alone.

CONCLUSIONS

A revision of present methods of classifying the causes of death from diseases peculiar to early life would give more accurate information than is now obtainable.

Better obstetric teaching, which implies larger and better endowed teaching clinics, is necessary if birth injuries are to be minimized. The use of the new-born child for clinical teaching by the department of pediatrics should prevail in every university hospital.

Complete necropsies should be performed on every infant dying within the first month of life.

The frequent occurrence of intracranial hemorrhage, as shown in necropsies, compared with its rarity in other statistical tables, suggests that it is frequently undiagnosed. Prompt diagnosis and use of hemostatic therapy would save many lives.

The rate of congenital heart diseases in general community statistics, as compared with statistics from necropsies, is much too high. Patent foramen ovale is too frequently given as a cause of death.

8. Holt, L. E., and Babbitt, Ellen C.: Institutional Mortality of the New-Born, J. A. M. A. **64**: 287 (Jan. 23) 1915.
9. Holt, and Howland: Diseases of Infancy and Childhood, New York, 1922.
10. Birnbaum, R.: Malformations of the Foetus, London, 1912, p. 142.
11. Vierordt, K. H., in Nothnagel's Specielle Pathologie und Therapie, Vienna **15**: 55, 1898.
12. Hemenway, H. B.: Am. Phys. **26**: 388 (May) 1921.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SPALDING AND FOOTE

DR. LOUIS I. DUBLIN, New York: In a full paper on early infant mortality that I published recently, I attempted to bring together all of the evidence bearing on this subject. My first conclusion was that syphilis was apparently the most important cause of early infant deaths. It is very interesting to have had this conclusion so strikingly confirmed by Dr. Spalding. The material used by Dr. Spalding was somewhat different from mine. He attempted to cover the entire period of fetal life, whereas my material was limited to the last months of fetal life and to the children born alive. Therein lies, I believe, the great value of Dr. Spalding's work; for it is, to my knowledge, the first effort on a fairly large scale to record the conditions responsible for neonatal deaths, having in mind the entire period of uterogestation. In the main, one may say that very much the same factors are at work to destroy infant life, in utero and in the first month post partum. There are two principal factors. The first is unquestionably syphilis, and the second is the toxemia of pregnancy. Together, these two account for approximately two thirds of all the misfortunes. The other third is accounted for variously, as we are concerned with the fetal deaths, or with those of live born children during the first month. In the former group, pelvic inflammatory diseases of the mother play an important rôle. In the latter group, that is, of the children born alive, injuries received at birth and the pneumonias are the outstanding items. There are, of course, a goodly number of other causes, but they are minor. It is difficult to agree with Dr. Spalding that little may be expected from the intensive treatment of syphilitic mothers during pregnancy. The experience of Dr. Williams at Hopkins indicates, quite to the contrary, that a great deal can be accomplished if an intensive effort is made to discover early in pregnancy, by routine Wassermann tests, those women who are infected, and then to treat them intensively during pregnancy. By this means we can reduce the percentage of infant deaths. Dr. Spalding says, in explanation, that he was not able for various reasons to discover these cases of syphilis during the pregnancy of the mother. He waited until the child was born dead or died soon after birth and then, by an examination of the placenta, and by other means, he discovered the syphilitic infection. By far the better method is to discover these cases during pregnancy.

I am entirely in sympathy with the suggestion of Dr. Foote that the classification of causes of death as at present used is very unsatisfactory for the deaths of early infancy, and that the classification needs revision. The international list of causes of death, so far as this group of conditions is concerned, was never well conceived. Dr. Bertillon, who was the father of the international classification, evidently knew very little about, and, perhaps, was interested less, in the matter of early infant mortality. That lack of interest is reflected in the poverty and in the utter inadequacy of the classification. Strangly enough, the world has sat still with regard to this classification. The general attitude of physicians well informed with regard to the factors causing infant mortality has been to let the matter rest as it is. Certainly, the several revisions of the international list have not kept pace with the immense increase of our knowledge in regard to the factors of early infant death. The revision of Groups 10 and 11 of the list should be undertaken early. It will involve many difficulties, which will have to be cleared up by research. Much will depend on the point of view of the classification, for in this group of deaths we are concerned not only with the actual conditions found in the child, but also with the antecedent conditions in the mother, which probably acted as primary causes in the misfortune to the child. If we are concerned with the actual anatomic condition of the child, that is one thing. If, on the other hand, we approach this problem from the point of view of the student of preventive medicine, then the classification will often be different. Possibly, there will be no successful classification unless both these factors are considered; but this will involve much discussion, and it would be very desirable, I think, to have this section appoint a committee to cooperate

with the statisticians of the American Public Health Association. A joint conference on the revision of the international list with reference to this very important group of cases of death should be asked to prepare such a revision.

DR. ARTHUR M. ROGERS, Los Angeles: It would be very unfortunate if the impression embodied in Dr. Spalding's paper should go out as the dictum of this section, viz., that little or nothing can be done to reduce the appalling fetal and infant mortality due to syphilis. It is well known among those who work in this field of medicine that there is never a time in the history of an individual afflicted with congenital syphilis when it can be so surely and so rapidly cured as while it is within the mother's womb, if the mother is treated properly. I wish to make that as emphatic as I possibly can, and I do not think any reliable syphilologist will deny it. The great difficulty is in failure to diagnose syphilis in pregnant women early. Intelligent search for this disease early and, indeed, throughout the period of gestation is quite as important as the customary examinations for kidney disease, and should be a part of the routine care of every pregnant woman. The time to treat syphilis in the new-born or the fetus and to reduce its mortality to the vanishing point is while the child is in the mother's womb.

EPIDEMIC (LETHARGIC) ENCEPHALITIS

THE RECENT NEW YORK EPIDEMIC *

EDWARD LIVINGSTON HUNT, M.D.
NEW YORK

So much has been written about encephalitis that it is difficult to say anything new and useless to group symptoms or describe the course of the disease. I thought it would prove more interesting and possibly more instructive if I reported a few observations and related a few of my experiences in connection with the disease. In this way, I shall hope to bring about an open discussion bearing on some of the many questions that pertain to encephalitis.

New York City has had a great many cases of encephalitis in proportion to the population, probably more than any other community. And yet, strange to say, Philadelphia, which is only 90 miles away, has had very few.

The encephalitis epidemic of 1923 differed from its predecessors in three respects: It was more extensive, more virulent, and more often fatal. It resembled its predecessors in two important respects: in the time of its appearance and in the fact that it followed closely a severe epidemic of influenza. In 1922, the patients who were attacked by encephalitis were largely young and strong adults. In 1923, the patients included all types: the very young, the very old, and the weak and strong. That the 1923 epidemic was undoubtedly more extensive than the one of 1922, will become evident if one looks at the number of cases of encephalitis that were reported to the Board of Health of New York City.

In the period from Jan. 1 to March 31, 1923, there were reported to the board of health in New York 577 cases of encephalitis. This is more than double the number (228) reported for the corresponding period of the year 1922. In considering these figures, one must bear in mind that in 1923 the medical profession was both more competent and also more anxious to diagnose the condition. Making allowance, however, for these two factors, one must admit that the 1923 epidemic far exceeded that of 1922. That the epidemic of 1923 was not only more widespread, but also more fatal than that of 1922 will be admitted when it is realized that the proportion of deaths reported was more than 3 to 1, whereas in 1922 the ratio of deaths was only over 2 to 1. In 1923, in the two months of January and February alone, the deaths numbered ninety-seven, whereas in the corresponding period of 1922 the deaths numbered only twenty-four. If we analyze these statistics, taken from the board of health report, we find that a greater number of deaths occurred among females than males, and, in proportion to the number of cases, a greater number of deaths occurred among those under 20 and those over 40 than in the period ranging from 20 to 40. These two facts would justify us in stating that resistance and age were important factors to be weighed in considering the prognosis of encephalitis.

During the same period, it is interesting and instructive to consider the incidence of encephalitis by age groups. The board of health has compiled the figures for the two months of January and February. In this period there were reported 268 cases. Of these, fifty-nine occurred in the twenties, fifty-eight between the ages of 5 and 19, and fifty-three in the thirties. Under 5 years of age there were forty-eight cases, and over 40 years of age there were forty-eight cases. No age was given in thirty-six cases. These cases, when divided into sexes, show a great preponderance in favor of the disease attacking the male sex, the proportion being 172 males to ninety-six females.

Thus, encephalitis almost invariably followed influenza; it appeared in a community which had already been attacked by influenza or by a high prevalence of respiratory diseases, and it always reached its height in the most trying part of the year.

I am convinced that the epidemic of 1923 was more virulent than that of 1922, because the types that I saw in 1923 were more prolonged and more severe. It was not until 1923 that it became usual to see patients with elevated temperature for weeks and conditions of stupor for several days. Never before that year did we witness so many cases of prolonged and severe pain, or others with such marked and persistent choreiform movements.

It is interesting to consider the two ways in which the epidemic of 1923 resembled that of 1922. In each year, while a few cases occurred in the late fall and early winter, it was not until late in December that the number became considerable, and it was not until still later, when winter was well established, that encephalitis assumed the proportions of an epidemic. The other factor, the occurrence of influenza preceding the encephalitis outbreak, was identical in the two years.

In each instance a severe and protracted epidemic of influenza began in the early fall, reaching its peak at the beginning of winter. Shortly after Christmas this epidemic began to subside. Almost immediately after this, and coincident with the severe weather of winter, appeared a well defined epidemic of encephalitis. To behave this way was characteristic of encephalitis, because just this has always been true of every encephalitis outbreak in the history of the world, save one only, which was reported in Austria.

It is not out of place at this point to revert to the epidemics of 1890-1891. In that year occurred a severe epidemic of influenza. As it reached its height and

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began to subside, an unusual type of influenza appeared. It was called nervous or cerebral grip. These cases, in view of subsequent events and of present-day knowledge, were undoubtedly mild cases of encephalitis, so that again, in this instance, encephalitis appeared in a characteristic way.

It would seem, therefore, that two factors were essential to produce a violent encephalitis epidemic: a severe winter and influenza. Just what bearing these two factors have on encephalitis is difficult to say. Possibly they prepare the way and lower the vitality; possibly the influenza bacillus and that of encephalitis have something in common.

CONTAGIOUSNESS

In New York it is the custom to admit patients with encephalitis to the general medical wards. No attempt is made either to segregate or isolate. The question of infection or contagion is never discussed. In the epidemic of 1923, I was struck with the fact that no cases developed in any of the hospitals, and I do not recall an instance in which two cases were reported in one family or in one home. And yet, in other parts of the world, undoubted instances of such a kind have been recorded. In England, McNally reported the occurrence of twelve cases of encephalitis developing in a single building which harbored twenty-two inmates. Marie cites encephalitis as having attacked two sisters. Netter reported the disease as occurring in the case of three children who occupied the same room, and Jorge of Lisbon knew of the disease developing in a man who came from a distance to visit a friend sick with encephalitis. Reese has encountered the case of a nurse who contracted the disease while attending a patient. The nearest approach to anything so definite and conclusive as these reports occurred in New York in the epidemic of 1922. In that epidemic, in each of two hospitals in the crowded part of the city, one of the interns developed a definite and straightforward attack of the disease. I also knew of a nurse with encephalitis. All of these instances, taken together, indicate very strongly the contagious nature of this disease. It will be interesting and instructive to learn of any similar instances. It will also be instructive to hear the views of others as to the advisability of isolating these cases. It strikes me that there is enough evidence to warrant segregation; it might do some good; it certainly can do no harm.

If we take the years in which encephalitis appeared and became epidemic, subsided, and then again became epidemic, we find that they correspond with the outbreak of war. From this coincidence it would seem fair to conclude that the conditions which prevailed during war time were conditions which favored the development of the disease. Are not these the same conditions that spread contagious diseases—bad hygiene, close living, lack of cleanliness, exposure, the close contact of large bodies of troops, and the transportation over a distant part of the world of armies?

This would be corroborated by the statement of Bassoe, who observed that nearly all his patients suffering from encephalitis had been in a more or less run down condition prior to the onset.

Another point that should be considered is the rapidity and systematic regularity with which the disease attacked different communities and different parts of the world. After appearing first in the middle of Europe, it spread rapidly to France and England, and then crossed the Atlantic and continued due westward. In 1918-1919, the peak of the outbreak was reached in New York City in January, in Virginia in February, in Louisiana, Texas and Illinois in March, and finally in California in April.

Do not these facts furnish additional proof that encephalitis is contagious, and is it not reasonable to suppose that when better living conditions prevail the exacerbation of the disease will be correspondingly less acute?

I think another observation is worth recording, and that is that I myself knew of five medical men who became afflicted with encephalitis. This seems to me a large proportion. I do not know that one is justified in drawing any inference from this—possibly it may be evidence as to the occurrence of contagion.

In 1922, the peak of the epidemic was reached in January; in 1923, in February. This follows the same train of thought as does Bassoe's statement that nearly all of his patients were in a more or less run down condition prior to the onset.

The conclusions to be drawn from the recent New York epidemic are the facts that: (1) influenza prevailed previous to the appearance of encephalitis; (2) there was a more widespread prevalence of encephalitis in 1923 than in 1922; (3) with each succeeding year, the cases of encephalitis become more severe; (4) in the last epidemic, the proportion of deaths was greater than in any preceding epidemic; (5) the greatest proportion of cases occurred between the ages of 20 and 40; (6) more males were affected than females; (7) females succumb in greater numbers than males; (8) while the disease has been more prone to attack the young and robust in recent epidemics, it has attacked all ages; (9) in the young and those over 40, the disease is more fatal; (10) evidence of contagion is absent, and (11) improved hygiene and greater supervision and control on the part of our boards of health are necessary.

LABORATORY AND CLINICAL FINDINGS

In almost every case of encephalitis that I saw in 1923, the spinal fluid was examined. In the large majority of cases it was abnormal; in a small minority, normal. I think it is fair to say from my observation that the more severe the attack proves, the greater is the likelihood of finding abnormalities in the fluid. These abnormalities consisted of changes in the cell count, in the globulin content, in the sugar content, in the pressure and in the colloidal gold reaction.

The cell count was increased in severe and well marked cases, especially at the beginning of the disease. The amount of increase varied considerably; this pleocytosis was likely to change as the disease progressed, so that three different lumbar punctures taken on three different occasions throughout the course of the disease would be very apt to give three different results. The tendency is for the cell count, early in the disease, to reach its greatest abnormality and then gradually to return to the normal. An observation of this character should teach us the importance not only of one lumbar puncture but also of repeated lumbar punctures. There does not seem to be any connection between the severity of the attack and the character or number of the cells.

The globulin usually showed a slight increase, but without any relation either to the pleocytosis or to the clinical type of the disease.

The sugar content of the spinal fluid was almost invariably increased.

The colloidal gold reaction is not pathognomonic in encephalitis. In almost all of our cases we found a slight curve of irritation, but not one that could aid much in forming a diagnosis. There was nothing characteristic in these curves.

The importance of examining the spinal fluid is from the point of view of differential diagnosis. In tuberculous meningitis, the sugar content is diminished; in cerebrospinal syphilis it is normal, and in encephalitis it is increased. In tuberculous meningitis the cell count is increased; in cerebrospinal syphilis it may be anything, but usually is increased, and in encephalitis it is at first increased and then normal. The slight curve of irritation following the gold test is of help in differentiating general paralysis and acute forms of syphilis.

UNUSUAL SYMPTOMS

In encephalitis, some of the unusual symptoms are those connected with respiration, such as persistent, rapid respiration, irregular and spasmodic, forced respiration, inspiratory dyspnea, tachypnea and difficulty in breathing; others are paroxysms of deep breathing; others are those connected with the bladder, such as anuria, hematuria, retention, polyuria and incontinence. The polyuria seems due to changes in the third ventricle. Gossett and Gutman reported a case in which the patient passed 10 liters for ten days. Pain is a constant symptom, but the forms in which it may appear are irregular and varied. I recently saw a case in which pain in the gums was most severe and distressing. In another, pain in the region of the cecum came on periodically, giving great distress.

The motor disturbances are also frequent and of various kinds. Head nodding, twitching of the abdominal muscles, and choreiform movements of the arms are the most common. We had two cases in St. Luke's Hospital in which there was a constant and rhythmic movement of the lower jaw.

Disturbances of the eye muscles are common; those of the fundus much less so. It is now generally recognized that, in encephalitis, hemorrhages, papilledema and choked disk do occur. I have seen three or four instances of choked disk in this disease.

Convulsions occur; they simulate both the petit and grand mal of the epileptic. They may occur at fixed intervals or be entirely unrelated to any cause.

An unusual symptoms which I observed in one patient was yawning. This patient, for a period of two weeks, yawned anywhere from three to five times an hour during the time he was awake and less often during his sleep. At any time when he was sleeping and was aroused, he would immediately yawn several times. The habit became so bad that three times during his stay in the hospital he dislocated his jaw. Accompanying the yawning there was a persistent and constant jactitation of the chin. The latter, when I saw him several weeks afterward, still persisted, although the yawning had ceased.

Prolonged elevation of temperature is not unusual. I followed one patient who had fever for sixty days, another for forty, and a third for twenty. In most of the cases with protracted fever, the degree of temperature was not high. It usually began as high, but at the end of a week registered between 99 and 100 F.

MENTAL COMPLICATIONS AND SEQUELAE

One of the characteristics of encephalitis is the peculiar change that the disease exerts on the character of the patient. This has been spoken of often, but I do not think that sufficient emphasis has been placed on the effect the disease exerts on children. Children who have contracted encephalitis appear to be more susceptible to changes in character and disposition than do adults. These changes are constant and bizarre. They take the form of emotional instability, bad temper, incorrigibility, insomnia, phobias and hysterical reactions. A curious fact is that in nearly all the reports of these cases, the children were, before the illness, unusually good and well disciplined. We had one boy of 9 who, on entering the hospital, was of such mild disposition, good temper and of so gentle and refined bearing as to attract the attention and interest of all connected with the ward. This boy at the end of two months became as rough and foul-mouthed as a street gamin, and his language finally was so obscene that he had to be removed to another institution. His choice of words reminded one of the language that is so characteristic of the acutely maniacal and demented woman of refinement and culture. In addition to the symptoms that I have mentioned, I might say that many postencephalitic children have been found to be liars, thieves and mental defectives. Just what the prognosis is going to be in these cases it is impossible to say. Sufficient time has not yet elapsed; it would be far better to wait three or four years. I should feel, however, that the prognosis in children would be better than in the case of adults.

Ebaugh observed several of these cases and found that spinal drainage gave good results. I have never tried it in this symptom complex.

Mental complications are common; mental sequelae, even more so. These assume all forms: exhilaration, depression, dementia, lack of the proper sense of proportion, confusion and profound stupor. Depression is the most common psychosis of all. It is prolonged, and may vary from a slight depression to that of a profound melancholia. Last year I followed one patient who at the end of a three months' illness, which was characterized by somnolence, fever and eye paralyses, developed a typical and well marked period of exhilaration. This patient slowly improved, and has now completely recovered. In our hospital service was a patient with a profound degree of depression and mental deterioration. He had always been well; he became acutely ill, and rapidly deteriorated mentally. There were no very definite signs pointing to encephalitis. The diagnosis was considered probable, but was confirmed on necropsy. I cannot describe this patient as having been somnolent; rather did he suggest the course of a fulminating general paralysis of the depressed type. In many, the mental changes are less marked, and could better be described as character changes. Their outlook on life is different; they take responsibilities less seriously, and become more erratic and less trustworthy; others assume a pessimistic and disinterested attitude. I cannot leave this part of the subject without remarking that many of these patients who display mental and character changes may have been congenitally predisposed to such changes.

PROGNOSIS

The most difficult problem connected with encephalitis is the prognosis. There is nothing to guide us, and we have no reason to feel that with the expiration of any fixed period of time the patient has escaped any of the sequelae. In some of the cases it seemed as though one could make a definite prognosis either for the better or the worse; but after I had observed a large number and had followed them for several months I recognized the futility of trying to forecast the outcome. I believe that in no disease is the prognosis more difficult. It is not fair to say that it should be guarded, because I have seen patients who had what appeared to be very severe attacks, with a bad prognosis, recover completely. We should recognize the fact that in encephalitis we are quite ignorant as to the course and outcome of the disease.

ABSTRACT OF DISCUSSION

DR. D. H. MORGAN, Akron, Ohio: I wish to ask Dr. Hunt a question in reference to a symptom that was present in a case which I saw. A girl, aged 12 years, was exhibiting post-encephalitic psychotic manifestations. One of the outstanding symptoms was that she would not reply to a question unless asked at least twice or in multiples of two. She would not answer from four to eight when questioned. In other words, no response would be made to a question except at two or a multiple of two. Has Dr. Hunt seen this exhibition; what is its basis?

DR. PETER BASSOE, Evanston, Ill.: When I was asked in 1920 to give some figures to the Research Association, I tabulated the cases I had seen up to that time. There were forty-nine—twenty-four of one sex and twenty-five of the other. As to contagion, I know personally of one instance, that of a nurse who had taken care of a patient with encephalitis and contracted the disease. It may be well to call attention to Kling's experience. I believe that his observations have not been reported very extensively, except in the Swedish language. Kling was a member of a government mission that went into northern Sweden, where the population was very sparse, and made an extensive survey during an epidemic. They concluded that they could trace the disease from person to person, and showed a period of incubation of ten days that they considered to be quite definite. They found a large number of abortive cases, just as they had in poliomyelitis. With regard to our epidemic in Chicago, conditions have been different from those in New York and on the Pacific Coast. We had most of our cases in the winter of 1918, 1919 and 1920. There were very few cases in 1921 or 1922. We did have a few cases this year, all undoubtedly acute cases, but we have had a most astonishing number of late Parkinsonian cases. I have seen several cases in young persons who give a distinct history of having had encephalitis in 1919, and who did not develop any symptoms at all until 1922, three years later; so that in making a prognosis I would never say that a patient is cured. Persons have been perfectly well in the interval. Why do they get these symptoms three years later? It does not seem possible that we are dealing with a mere sequel from the nature of the dead tissue. We must assume that the virus remains living in these persons. This can be explained in two ways: Either the virus may lie dormant in the brain as the spirochete in syphilis does before it produces general paralysis, or possibly the virus may remain in another part of the body; for instance, in the liver or other internal organ, until some condition mobilizes the virus, so to speak, so that it again gets an opportunity to show its affinity for the brain.

DR. WILLIAM HOUSE, Portland, Ore.: In the 1923 epidemic in the Pacific Northwest, all of the larger cities had numerous cases. The twenty patients whom I saw were all between 20 and 30 years of age, and equally divided as to sex. Six patients, three of each sex, died, giving a mortality of 30 per cent. The epidemic first appeared in January, and recurred in waves. Based on the length of these waves and on preceding experience, I had come to the conclusion that the period of incubation must be about sixteen days, but I dare say that the epidemiologists who have estimated it at ten days have had opportunity for more accurate observation. The first wave was most severe and was attended in some sections by a mortality as high as 70 per cent. Successive waves were milder. Myoclonic and neuritic forms were much more prevalent than in preceding epidemics, and pain and twitching were infinitely more severe. In one case, for instance, pain began in the median nerve of one arm, accompanied by muscular twitching which, with the pain, soon spread to the other arm and then to the diaphragm. This patient's muscles jerked at the rate of seventy-eight times a minute continuously for ten days, when death occurred from respiratory paralysis. Without exception, pain or myoclonus, or both, were present in every case I saw. I used the Rosenow serum in about a dozen cases, discontinuing it, in part, because of the urticaria it caused. I am convinced that in one case, at first regarded as hopeless, it was a potent factor in saving the patient's life, and in one or two other cases it seemed to have beneficial effects. Whether these were due to specific effects or just to the reaction from the horse serum, I am in doubt. Prior to last winter I had never seen a case of encephalitis accompanied by convulsions; but then I saw two cases (which I hope to describe elsewhere) in which typical jacksonian convulsions occurred. As for parkinsonian cases, there are many of them now appearing as a result of the preceding epidemics. Three patients whom I had observed with sequelae of encephalitis have committed suicide.

DR. EDWARD LIVINGSTON HUNT, New York: I have never seen anything that resembled the case cited by Dr. Morgan. I am unable to explain it.

REEDUCATION IN APHASIA*

CHARLES G. STIVERS, M.D.
LOS ANGELES

Aphasia is defined as a loss of or modification of the ability to change concepts into words in spite of the integrity of the speech machinery. It is also a loss of the ability to understand the audible word in spite of the fact that hearing ability may be present. There is often inability to speak spontaneously or to use words. Reading, writing and writing from dictation are involved. Copying may be impossible.

Motor aphasia is the failure to express ideas. Sensory aphasia is the failure to receive impressions and transmute them first into ideas and then express them.

REPORT OF CASE

History.—C. J. K., a man, aged 36, a plumber, married, with one son, was struck on the left side of the head by the propeller of an aeroplane wind machine that he was starting, Nov. 5, 1919. A concave area extending from the middle line of the head downward toward the ear was dished out; both tables of the skull were destroyed and carried away; the dura was shattered and the cortex of the brain was macerated; the patient was in shock when seen by Dr. R. G. French, the surgeon who attended him, and was unconscious. There was complete paralysis of the right side.

Emergency surgery consisted of controlling the hemorrhage, cleaning up the cortex of the brain, suturing together the fragments of the dura, and putting the patient to bed. A fatal prognosis was given.

At the end of the first week there was evidence of regaining consciousness with complete aphasia; the patient gradually regained the function of the right leg; the right arm and shoulder remained paralyzed. He left the hospital in about

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two months. In about thirty days epileptic seizures began to develop, becoming more frequent and more severe. Seven months later Dr. French dissected out all scar tissue and inserted an inlay bone graft, taking the graft from the head of the tibia, which was the only part of the body where a large enough graft could be procured. The wound healed by first intention with apparently perfect result. The paralysis of the right arm and right side of the face gradually improved. The patient had had several epileptic seizures since the time of the operation, which was in September, 1920. These were controlled by a daily dose of 5 grains (0.3 gm.) of phenobarbital (luminal).

Examination.—The patient, referred to me, Oct. 16, 1922, was of German-Swiss origin and common school education to the fifth grade. His family history had no bearing on his case. He was nervous, apprehensive and slender, and the hands and feet were cold. He gave the right hand in greeting, but there was no strength to the grip. He was right handed before the injury.

Speech examination revealed that Ah was Ah; Ah was A; Ah was E (because he could not make the proper mold with his tongue and also because the kinesthetic sense was affected); Aw was Aw; O was O; Oo was Oo; Ah was I; Ah was Eh; P was P; B was B; M was M; Oo was Wh; Oo was W; Ts was Th′; D was Th″; F was F; W was V; S was S; S was Z; S was Sh; L was L; T was T; D was D; N was N; Oo was R; T was K; D was G; H was H; No was Y; S was Zh; St was Sch; Ts was J.

The vocabulary consisted of about one hundred words. The patient repeated "papa," "mamma," "baby." He said "tahdah" for "cargo," and said "fine" and other words imperfectly. He could whistle in expiration but not inspiration. He could not whistle (repeat) the first eleven notes of "Marching Through Georgia," or any other tune.

Questions and Answers: 1. Can patient speak spontaneously in ordinary conversation? (Ask him: "What is your trouble?"). *Ans.*—Yes, but does not pronounce the words right.

2. Can he enumerate and denominate number and name objects? Question: "Can you count your fingers aloud?" *Ans.*—Yes. "Can you name the members of your family or the days of the week?" *Ans.*—Yes. Can you name these objects? Chair: Yes. Nose: Yes. Key: Yes; says "tee."

3. Can he speak from dictation? (Can you repeat: "Now is the time for every good man to come to the aid of his party.") *Ans.*—Yes, but leaves out two or three words and mispronounces others.

4. Can he read aloud? *Ans.*—Yes, slowly, and with effort.

5. Can he read to himself and understand it? *Ans.*—Part of a daily paper—some words in each sentence.

6. Can he recite what he reads or what he has learned? *Ans.*—Parts of what he has just read, or if he is familiar with (has practice with) the words.

7. Can he write spontaneously? *Ans.*—Yes.

8. Can he enumerate and denominate in writing? Question: "Can you write the numbers 1 to 10?" *Ans.*—Yes. "Can you add this column of figures?" *Ans.*—Yes, but cannot say the words involved in the process, although he does know the method and answer. "Can you write the days of the week?" *Ans.*—Yes, but leaves out Thursday, but corrects himself. "Can you write the names of these objects shown?" *Ans.*—Yes: Book, pencil, Key (says "tee").

9. Can he write from dictation? *Ans.*—Yes, with some errors.

10. Can he copy written or printed matter? *Ans.*—Yes.

11. Can he hear and understand what he hears? *Ans.*—Yes, but makes mistakes.

12. Can he see and understand what he sees? *Ans.*—Yes.

13. Is he aware of such errors as he may make in speaking or writing? *Ans.*—Sometimes, and says so.

14. Has he a concept of his own speech? *Ans.*—No.

15. Does he misuse words? *Ans.*—Seldom; "said good morning for good night." Is he ungrammatical out of proportion for his education? *Ans.*—No. Does he perseverate in fixed phrases? *Ans.*—No.

From the examination outlined above, it may be deduced that this patient showed a loss in the intellectual speech mechanism, but not in the emotional. No agraphia was present. Partial word deafness existed. Word blindness was not demonstrated. Inner speech was absent. He had alexia, aphemia and paragraphia.

Reeducation.—The patient was told that he should not compare his speech or his ability to express anything with respect to either his former condition or with his boy, a bright youngster in the third grade of the grammar school, but to think of himself almost as beginning all over again, and to note his improvement, which was bound to be constant. Emphasis was put on cheerfulness and on the necessity for faithful practice every day, and his wife was enlisted to aid in his treatment by helping him to practice, to read to him, to cheer him and to rebuild his self confidence. Deep breathing, auditory practice, importance of the vowels, inflection, and use of all necessary face muscles, as in E and I, were emphasized. His own touch sensations in his mouth, tongue and palate were brought to his attention as each difficulty was encountered, and the proper molds demonstrated by actual visual and tactile examples.

He was given a little blank book in which to record each lesson. Speech reeducation began about Nov. 1, 1922. It consisted of diaphragm breathing and counting, one, rising inflection; two, falling inflection. November 6, he was shown why he did not make the wide "e" sound: Because of the partial paralysis of his tongue, it did not approach the roof of his mouth closely enough, and this faulty position was corrected for him. He soon learned this perfectly as well as "eh," and was able to use these sounds, as in "five," "eight," "nine" and "twenty." Counting was continued up to one hundred, and by November 13, or one week, he was able to count perfectly. On the 17th, sums in addition and subtraction followed. Vowel practice combined with consonants, especially l, r, b and m, was continued throughout. In December, singing the vowel sounds up and down the scale was begun. Multiplication and division were begun.

Difficult sounds for him were t, d, n, l, r, k, g, h and y, for the reason that the tongue and cheek were partially paralyzed. A great deal of practice was necessary to perfect the kinesthetic sense in these sounds. Words were practiced throughout. A sample list of words was: tomato, door-knob, lonesome, nobody, rowing, coconut (kokonut), gorilla, hose-cart (hose-kart), yeoman and judge.

In January he began rhymes and poems, making appropriate gestures. "Enee meenee minee mo," "One, two, buckle my shoe," and "Jack and Jill went up the hill," arithmetical tables of time, measurements, money, liquid measure and dry measure. Writing with both hands simultaneously was used.

He had a saving sense of humor; and, as smiling and laughing were good for him, I took up Charlie Chaplin and built up a lot of practice around Charlie's loose shoes, clothes, Jews, etc., using such sentences as: Charlie Chaplin is a Jew; Jews choose cheap shoes; Jews choose loose shoes; judge a Jew by his shoes; let Charlie Chaplin choose loose shoes at a Jew clothier's, and "A Dog's Life" is one of Charlie's best cinemas (kinemas).

In March he began to keep a diary, and recited to me what he did every day of the week.

His present condition shows a great improvement. He can now copy words, read words, say words and sentences, use all forms of grammatical speech; in fact, can express all things understandingly, if he does not hurry. His voice, weak at first, has gained in volume, resonance and pitch. He is much more cheerful and has a more hopeful outlook for the future.

1115 Arapahoe Street.

Effect of Cold Water on Face.—The application of cold water to the face, particularly when it is applied as a spray, produces a gasp followed by a pause in respiration. The terminals of the trigeminal nerve are excited and a reflex is induced by way of the bulbar autonomic apparatus; the impressions are carried to the lungs by filaments in the vagus nerves, and vasomotor changes are also induced in the mucous membranes of the head.—C. F. Sonntag: *Proc. Roy. Soc. Med.* **16**:9 (Aug.) 1923.

BENIGN STRICTURES OF THE RECTUM *

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In reviewing the subject of rectal stricture, one is forcibly impressed with the fact that most of the discussion and study of the subject is devoted to the etiology, a phase concerning which the least satisfactory and uniform conclusions have been drawn. All writers agree that rectal strictures come under two chief headings, malignant and benign; but when the latter type is considered, the significance of syphilis as a cause invariably becomes the leading point on which opinions vary widely. Often the relative frequency has been expressed on a percentage basis, but the estimates are so varied that even an average of them would be of little worth. Certain observers assert that syphilis is the cause of few, if any, rectal strictures; but the greater number attribute to syphilis the existence of most lesions of this type. Asman [1] has said: "The vast majority of strictures of the rectum are due either to syphilis or to cancer. Other causes are rare." Gant has classified twenty-five cases of rectal stricture, thirteen of which he believed were the result of syphilis. Cripps [2] has a record of seventy cases of rectal stricture, thirteen of which were classified as syphilis. Ball [3] wrote: "It is, however, probable that a large majority of cases of stricture are due to syphilis." Henri Hartmann,[4] in his recent report of eighty-six cases, declared that syphilis undoubtedly existed in thirty patients" and that "the action of syphilis is today acknowledged everywhere." He also quoted Juliusberger as having noted syphilis in eight of twenty patients; Poelchen in ninety-six of 215, and Allingham, in thirty-five of seventy. Lockhart Mummery,[5] in 1914, said, "It cannot be proved that syphilis is a cause of rectal stricture." He says he had not observed it to be the cause (except of condyloma of the anus and chancre), and that there is no reliable record in St. Mark's Hospital of tertiary syphilis of the rectum or of syphilitic stricture. The usual teachings, however, have been that syphilis plays a very important part in the causation of rectal strictures.

Several factors have been responsible for the difficulty in determining the significance of syphilis as an etiologic factor in these lesions. First, there are not and never have been definite criteria. Until comparatively recently, if a patient suffering with rectal stricture had been previously affected with syphilis, the rectal lesion was at once pronounced syphilitic and was so treated. In fact, in a great many instances patients with rectal strictures have been treated for syphilis, notwithstanding the fact that there was absolutely no evidence to substantiate such a cause. All such treatment has been signally unsuccessful, and on this account a therapeutic test has not been possible. Our experience with the Wassermann reaction on the blood has taught us that a negative Wassermann reaction does not disprove the existence of syphilis and that a positive reaction does not prove that syphilis is responsible for the stricture.

The truth of Dr. Tuttle's [6] remark, "Nonsyphilitic stricture may exist in the syphilitic," is self evident. It is a regrettable fact that the microscope has been of little value in making a definite differential diagnosis. Owing to the insidious character of the onset of the trouble, the tissues usually are so changed by chronic fibrosis, secondary infection and ulceration that little can be determined of the original pathologic condition by the time the patient consults a physician. If such lesions manifested characteristic changes which could be attributed to syphilis, and which could be seen with a fair degree of constancy on microscopic examination, we would have the most satisfactory method of reaching conclusions. Warthin,[7] in his extensive work on the pathology of syphilis, has described certain microscopic changes which he considers pathognomonic of syphilis; he has noted these changes in numerous anatomic structures. With Warthin's conclusions as a basis, a number of specimens were studied in the Mayo Clinic, but the results were unsatisfactory. The formative and destructive changes were so extensive that only a chronic inflammatory picture was obtained. I cannot, therefore, formulate a more definite statement with regard to the etiologic significance of syphilis in the production of rectal strictures than has been offered.

HISTORY

Incontinence was complained of by a few patients; the degree could not be determined from the records. It is true, however, that this complaint was most marked in patients whose stricture was nearest the anus.

The average age of the patients was 40 years. Eighty-six were between 30 and 40; forty were between 50 and 60; sixty-two between 40 and 50, and thirty-eight between 20 and 30. Only eight were less than 20 years; in three of these the condition was congenital. The condition occurred in 148 (56.3 per cent.) patients between the ages of 30 and 50. In 250 (96.75 per cent.), the patients were more than 20. To a certain extent these data should be discounted, since the stricture had existed, in many instances, for a long time before the patients came to the clinic. Forty-three patients had known of their trouble for less than one year; twenty-two had had symptoms between one and two years; fifty-four between two and five years; seventy-six between five and ten years; forty-two had been troubled more than ten years, and in twenty-two the duration of the symptoms could not be determined. One hundred and seventy-one patients had been suffering with a varying degree of discomfort around the rectum for more than two years; 117 had had trouble more than five years, and forty-one had noticed symptoms more than ten and as long as twenty-four years. It is true, therefore, that the larger number of rectal strictures occur during adult life and cause symptoms for long periods. Although it could not be determined accurately, it is probable that the early symptoms were those of ulceration and destruction of tissue in the rectum, and that the symptoms of actual stricture were of shorter duration.

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* From the Section on Medicine, Mayo Clinic.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

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2. Cripps, H.: On Diseases of the Rectum and Anus, Including the Sixth Edition of the Jacksonian Prize Essay on Cancer, London, Churchill, 1913.

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6. Tuttle, J. P.: A Treatise on Diseases of the Anus, Rectum and Pelvic Colon, New York, D. Appleton & Co., 1906.

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ETIOLOGY

In presenting the etiologic phase of this study, it has been possible to record only the various circumstances as they were given in the histories. The part that syphilis has played could not be estimated with any more accuracy than has attended the efforts of other writers on the subject. An effort has been made, however, to gather all the evidence pointing to possible syphilitic origin and to test the value of such evidence. It should also be considered that the incidence of syphilis in the Mayo Clinic is probably less than in the clinics of large cities where dispensary patients are more numerous.

SYMPTOMS

Two hundred and fifty-eight patients with rectal stricture have been observed in the Mayo Clinic during the last ten years, 1912 to 1922. A study of the histories of these patients has revealed interesting facts. The greater number complained of constipation and had had increasing trouble with bowel movements, finding it difficult to force the feces through. One hundred and fifty-seven found it necessary to take purges constantly. Twenty had been troubled with constipation and diarrhea alternately. A history of diarrhea was given by ninety-four, but the constant tendency toward stoppage and the necessity of taking purges must have been a factor in the production of the stool frequency. In some instances true diarrhea had existed, but this condition usually occurred if the involvement extended above the rectum, as shown by the roentgen-ray examination of the colon, or if the patients had active endamebiasis. Forty-five patients had histories characteristic of actual attacks of obstruction. Passage of blood was the most constant symptom; 184 patients referred to it. One hundred and sixty-eight said that they had been troubled with pain and discomfort, usually associated with the effort of expelling the rectal contents. The pain, sometimes associated with cramps, was located in the lower rectum and seldom showed a tendency to radiate. One hundred and fifty-nine patients had noted pus in the feces.

One of the most interesting points in the histories of these patients was that only thirty-five had noticed deformity of the stool, which most writers assert is characteristic of low rectal lesions; pencil, ribbon and flat stools are the familiar terms. In 169 patients the stricture was limited to the first 10 cm. of the rectum; in forty-two the entire rectum was involved, and in five, the sigmoid and the rectum. There were, therefore, 216 patients in whom the lower rectum was contracted, and of these only thirty-five complained of misshapen stools. It has been my experience that patients whose stools are small and of the pencil or ribbon variety are more likely to be suffering from contraction (spastic or otherwise) of the anal lumen; constipation is usually associated.

In twenty-five cases, the histories were positive for syphilis; and in thirteeen, although the histories could not be considered positive, they were sufficiently suggestive to designate the cases as questionable. In eighteen patients, serum Wassermann reactions were positive; and in two, diagnoses of syphilis of the central nervous system were made. Thus, if the patients with positive histories, questionable histories, positive serum Wassermann reactions, and syphilis of the central nervous system are added, the total is fifty-eight. Three of these should be omitted, since they presented positive Wassermann reactions besides positive histories. Thus there were fifty-five patients who presented some evidence of having syphilis, or of having had it. Two hundred and twenty patients had histories negative for syphilis; 150 were negative to serum Wassermann reactions; the test was not made in ninety.

Twelve of the twenty-five patients with positive histories of syphilis had had operations on the rectum. Four of the others had had extensive operations for pelvic inflammatory disorders. Seven of the thirteen with questionable histories of syphilis had had operations on the rectum. Eight of the eighteen with positive Wassermann reactions had had operations on the rectum. A significant fact regarding this phase of the study was the decided tendency for the rectal symptoms to develop after such operations. One patient with a postive Wassermann reaction had active endamebiasis. Such data weaken the evidence that syphilis was the cause of the strictures in thirty-two of the fifty-five patients, and leaves only twenty-three with histories of syphilis, questionable histories of syphilis, or positive Wassermann reactions alone, associated with the strictures. It should be recalled, however, that in the group of thirty-two patients the chances of syphilis as a possible cause were evenly divided. There is also the possibility of syphilis occurring independently of the stricture.

It has been demonstrated generally that operative manipulations and "treatments" of the rectum which cause breaks in the mucosa and consequent infection have a decided tendency to cause strictures. This is significant and important when it is considered that 148 of the patients in this series gave histories of having had operations on the rectum. Sixty-three had had either "pile treatments" or operations for hemorrhoids. Unquestionably, a great portion of this work has been done and is being done by the quack "pile doctors," and, in view of the great care that must be exercised in conserving the rectal tissues in operating, it is surprising that more of the results of such blunders are not seen. Thirty-seven patients had histories of ischiorectal abscess, and the strictures were probably the result of extensive and oft repeated operations in attempts to eradicate the fistulous tracts. Incontinence was usually found in these cases. Ten patients gave histories of having had operations for rectovaginal fistula; four, Harrison Cripps operations; three, Kraske operations; four, tube resections; two, operations for recto-urethral fistula; ten, operations in the pelvis; two, plastic operations for imperforate anus; and two, resections of the rectum of unspecified type. Radium had been applied by rectum in three instances, and in two others the strictures had developed after the rectal mucosa had been blistered by a scalding rectal drip. Extrarectal pressure was noted in three cases, and *Endameba histolytica* in the stools of ten; four had multiple strictures. Symptoms of stricture developed in four women after the delivery of children. I have seen strictures that might be considered tuberculous, but they were usually associated with extensive fistula formation and not tuberculosis of the mucous membranes.

There were only 120 females in the series of 258 cases. Other observers have noted the condition more often in females. This fact has been offered as one of the evidences against syphilis as a cause, because it is possible that fewer women than men have syphilis. In Tuttle's[8] 313 compiled cases, 216 were in women.

8. Tuttle, J. P.: Fibrous Stricture of the Rectum, Boston M. & S. J. **164**: 445-454, 1911.

There were 190 women and twenty-five men in Poelchen's [9] 215 compiled cases, and Carré's [9] report had 210 women out of a total of 266. Poelchen's practice, however, was limited largely to diseases of women. It is believed, too, that the frequency of strictures in women can be ascribed to the fact that they have borne children and that pressure might be responsible. In the Mayo Clinic series, ninety-two of the patients were married women, sixty-five of whom had borne children.

The records of a few of the patients were unusual. One gave a history of having had a piece of stick driven into the rectum accidentally as he had jumped on a load of hay, thirty years before. A urethrorectal fistula resulted and, gradually, a rectal stricture. A young woman with a tuberculous hip, on which several operations had been performed, had a sinus from the hip joint communicating with the rectum. On proctoscopic examination, an extensive stricture was found. A patient now under my observation underwent a cystoscopic examination ten months ago elsewhere. Before he got off the table, he felt most excruciating pain around the pelvis. In a few hours a large swelling, with some discoloration, appeared around the perineum. He had remained in bed for about three months, during which time abscesses broke and discharged through the rectum. A few weeks ago he came to the clinic, complaining of increasing difficulty of passing stools, and of pain, pus and blood in the stools. On examination, a tubular constriction of the rectum was found, evidently produced by changes in the surrounding structures. The mucosa moved freely over the constriction, and was thrown into folds except where there were two rather large ulcers.

The complexity of the histories, and the impossibility of evaluating them from the etiologic point of view, is well illustrated by a patient who had been operated on for hemorrhoids ten years before, and had given a positive history of syphilis. The operation was followed in a short time by pus in the stools, and progressively difficult defecation. During the examination at the clinic, two Wassermann reactions on the blood were negative. Exploration and permanent colostomy were performed. A specimen from the stricture was reported to be inflammatory; tubercles were noted in the peritoneum. Inoculation tests on guinea-pigs were negative. Three years later after an attempt, elsewhere, to resect the stricture, the patient died. The necropsy report was syphilitic ulceration of the bowel. This case obviously could be classified neither as the effect of trauma due to operation, nor as a syphilitic stricture. Not all pathologists and specialists are agreed with regard to the possibility of diagnosing syphilis in lesions of this character, or to the criteria to follow in determining the etiology; this accounts for wide differences in statistics. I have heard, and I have read this expression: "Stricture of the rectum feels syphilitic." I doubt whether such a method of differentiation is dependable.

TYPES AND POSITION OF STRICTURES

One patient, examined in December, 1920, said that he had had a severe attack of bacillary dysentery in 1919, and since then had been troubled with diarrhea and the passage of blood and pus. When I examined him I found an ulceration extending about 8 cm. above the anus, and the entire rectum a contracted tube less than 2 cm. in diameter. This brings up an interesting point in connection with certain of these cases. Fifty-two patients with strictures also had ulcerative colitis. It has been impossible to establish the etiology of this disease, but it is not difficult to diagnose. Roentgenograms show characteristic and constant deformities of the colon, and proctoscopic examination reveals pathognomonic changes in the rectal mucosa. The tendency of the ulceration to heal, break down, and heal, producing scars over and over again (much like duodenal ulcer in its periodicity), always results in contraction and obliteration of the normal haustrations of the bowel, and a more straightened and contracted tube, the degree depending on the severity and the duration of the ulcerative process. I had the opportunity of examining the majority of these fifty-two patients, and the findings led me to believe that many of the strictures that we see and classify as syphilitic because there is no other apparent cause are the result of the same process, or one similar to that which causes deformity of the colon in ulcerative colitis. I have found that there is ulceration not only above and below the stricture, as is usually described, but also within the constricted canal. The ulceration above the lesion has been ascribed to fecal accumulation and irritation, and the ulceration below to trophic changes; other observers seldom have noted ulceration within the constricted canal.

The majority of the strictures occurred in the lower part of the rectum; 179 of them were confined to the lowest 10 cm.; forty-two involved the entire rectum. One hundred and twenty-seven were confined to the lowest 7.5 cm. of the bowel. Strictures that encircled the entire rectal lumen were by far the most common. It was difficult to make accurate determinations from the records, but it could be fairly estimated that there were 211 tubular strictures, thirty-six of the ring type, and eleven of the linear.

TREATMENT

It is not possible to outline any one best treatment for rectal strictures. The position, the amount of ulceration and depth of infection, the length of the constricted canal, the diameter of the lumen and the amount of obstruction produced, the degree of involvement of adjacent structures, the duration of the condition and the general state of the patient's health must all be considered carefully in determining the procedure in the individual case.

One hundred and nine of the entire series of patients were treated surgically. Simple dilation under general anesthesia was done in fifty-four instances. As a rule, the result was disappointing, the relief being only temporary; so far as could be ascertained, only seven patients were relieved. In the remainder the results were questionable, or satisfactory reports were not obtainable. Colostomy was performed in fifteen cases, and ileostomy in twelve. I believe there is a great deal to be said in behalf of these two operations, especially the former. It is very difficult to convince patients that it is best for them to live the remainder of their lives with the contents of the intestine emptying through the anterior abdominal wall; but, when the matter is put before them in the proper light, they accept the situation more often than would be expected. Without the colostomy, they have pain and difficulty in defecation. Many patients are obliged to wear pads; they are thin, sallow, sick, and have little to live for. One patient, herein described, on whom a colostomy was

9. Quoted by Hartmann (Footnote 4).

performed, returned recently for reexamination. The rectum was practically closed because he had not carried out instructions to keep the dilator inserted for a few moments each day, but he had gained 30 pounds (13.6 kg.), and was actively engaged in the pursuit of his work. He found no trouble in caring for the

TABLE 1.—*Symptoms and Area Involved*

	Cases
Constipation	157
Constipation and diarrhea	20
Diarrhea	94
Actual obstruction	45
Blood in the stools	184
Pain on defecation	168
Pus in the stools	158
Stool deformity	35 *
Lowest 2 inches	29
From 2 to 3 inches	98
From 3 to 4 inches	42 †
From 4 to 5 inches	26 ‡
From 5 to 6 inches	8
From 6 to 7 inches	8
All of the rectum	42
Sigmoid and rectum	5

* 13.6 per cent.
† Lowest 4 inches.
‡ 216 (84 per cent.).

abdominal opening, by irrigating twice a day and wearing an abdominal binder and gauze. The picture of this man who is happy, strong and useful, one year after colostomy, is in striking contrast to the man who is constantly suffering and spending his time and his fortune seeking relief.

Proctotomy was performed in ten cases. Three patients were cured; three had questionable results; two were improved and found it necessary to use dilators constantly afterward, and the other two remained the same. When resections were possible the results were more gratifying. Three Mayo-Kraske operations were performed and the strictures were cured. The stricture was excised in two cases; one patient improved and the other remained about the same. One complete cure followed a Mikulicz operation.

Medical treatment was advised in 149 cases. This consisted usually of systematic dilations with Wales bougies; remedies for syphilis were almost always

TABLE 2.—*Age and Duration of Symptoms*

	Cases
Less than 20 years	8
From 20 to 30 years	38 *
From 30 to 40 years	86 †
From 40 to 50 years	62
From 50 to 60 years	40
From 60 to 70 years	20
More than 70 years	4
250 (96.7 per cent.) more than 20 years	
Less than 1 year	43
From 1 to 2 years	22
From 2 to 5 years	54 ‡
From 5 to 10 years	76 ‡
More than 10 years	41
Questionable	23

* 30 to 50 years.
† 148 (56.3 per cent.).
‡ More than 2 years.
‡ 171 (63.3 per cent.).

added to the routine. The universal tendency to syphilitic therapy, in these cases, in spite of the fact that the histories, Wassermann reactions, provocative tests, neurologic examinations, and other diagnostic means do not bear evidence, is the best proof of the attitude of the profession toward the etiology of the condition.

Whenever possible, the stricture should be treated first by simple dilation. The cases should be selected very carefully. If the lesion is above the peritoneal reflection, or if it is very extensive, more drastic means must be used. But if the stricture is low and not too extensive, treatment by dilation is preferable before resorting to the more dangerous methods, and often brings about gratifying results. If the stricture is thoroughly dilated, if the proper after-treatment is carried out by inserting bougies regularly through the proctoscope, and if hot water irrigations and antiseptics are applied locally, healing will often be properly established and the recontraction which would ordinarily have occurred is avoided. The patient should have a proctoscopic examination at certain periods in order to be sure that there is no contraction and to keep the constricted canal free from ulceration. Ultimately the patient should be allowed to go home with a Wales bougie of suitable size to be used at regular intervals, to preserve the diameter of the bowel lumen. He should carry out a two-way irrigation through two catheters inserted into the rectum side by side. He may lie in a bath tub with the enema bag suspended from the wall. If a cleansing enema is taken first, clogging of the outflow is prevented. The water should be very warm, even as high as 120 F. Medication may be added to

TABLE 3.—*Clinical Findings*

	Cases
Positive history of syphilis	25
Questionable history of syphilis	13
Positive Wassermann reaction	18
Syphilis of the central nervous system	2
	58
Positive Wassermann reaction and positive history in same patient	3
Evidence of having syphilis or of having had it	55

Of twenty-five patients with positive histories, twelve had rectal operations and four others had operations for extensive pelvic inflammatory disease.
Of thirteen patients with questionable histories, seven had rectal operations.
Of eighteen patients with positive Wassermann reactions, eight had rectal operations and one had active endamebiasis. Total, 32.

the water, if desired. The canal should be irrigated for one hour each morning and afternoon. If such treatment cannot be carried out, as a result of the extent of the stricture, a resection should be considered. If there is doubt concerning such procedure, a colostomy should be performed, and, if possible, the stricture removed later. If it is found that resection is not possible, then the colostomy should remain permanently, or until the bowel lumen can be sufficiently restored by treatment to permit reconnecting the segments.

Certainly the greatest opportunity for healing the ulceration is offered after a colostomy, because not only is the fecal current diverted, but the bowel may be irrigated from above. The efficiency of this treatment has been demonstrated in cases of severe ulcerative colitis. When everything else has failed, the bowel being full of ulceration and the patient going down hill rapidly, an ileostomy has been made and a tube inserted into the lower segment at the time of operation. The next day a constant irrigation of water at 120 F. has been started at a rate about four times as fast as a rectal drip; the results have been astonishing. All the griping and tenesmus clear up within a few hours, and very soon the patient begins to improve. In cases of stricture with ulceration, this mode of therapy offers the best chance of a restorative operation.

CONCLUSIONS

1. The tendency of the profession to regard benign rectal strictures as syphilis seems unwarranted. The usual method of treating such strictures with a form of empiric syphilitic regimen seldom, if ever, produces beneficial results.

2. Most treatments are unproductive of complete cure, and the treatment that leaves the patient in the most comfortable condition should be used. Many such patients are doomed, at best, to lives of some discomfort, and it is their privilege to aid in deciding which of the various after-conditions are preferable.

3. Resection, when possible, is a most desirable procedure, but the operation is technically difficult and the risk high.

TABLE 4.—*Trauma*

	Cases
Histories of rectal operations	148 *
Hemorrhoid operations	63
Rectovaginal fistula operations	10
Recto-urethral fistula operations	2
Pelvic inflammations	10
Imperforate anus	2
Radium	3
Scalding rectal drip	2
Endameba histolytica associated	10
Multiple strictures	4
Prolonged labor	4

* 47.7 per cent.

4. Colostomy is the most dependable form of treatment in the severe cases; and, in combination with through and through irrigation, local medication through the proctoscope, and dilation, offers the best prospect for a later restorative operation. Most assuredly it places patients in a better state of physical and mental comfort, and enables them to become useful, not only to themselves, but to others.

5. From the standpoint of etiology, trauma and infection stand out prominently. Trauma from rectal operations or manipulations, and pile remedies of the "painless" type are factors in an astonishing number of cases.

6. A patient should not be condemned as syphilitic just because he happens to have a stricture of the rectum.

ABSTRACT OF DISCUSSION

DR. J. EARL ELSE, Portland, Ore.: There is no question that colostomy is sometimes indicated. But we know from a study of the patients who have had colostomies that it is impossible to prevent a certain amount of leakage, and that this leakage has an unpleasant odor. Even with the greatest of care, gas will escape at times. Ileostomy performs practically the same function and does not have this disadvantage. I did an ileostomy in a case of obstinate ulcerative colitis for the purpose of irrigating the colon, and, up to the present, the patient has refused to have the ileostomy closed, because I cannot guarantee that she may not have a recurrence of the ulcerative colitis. She states that she would rather have the ileostomy than run the risk of the return of her former condition. She has no odor about her. She is comfortable. This is true of nearly all of the patients on whom I have done an ileostomy. I want to make an appeal for ileostomy in place of colostomy in many of these cases. The patients get along just as well and are much more comfortable.

DR. HARRY P. RITCHIE, St. Paul: In cases of stricture of the rectum high up, the only thing indicated is a permanent colostomy. In one case of low lying stricture I tried to dissect out the scar tissue and approximate the mucous membrane. This was fairly successful, and the patient was much relieved. I have had five cases of stricture of the anus. These were all within the grasp of the sphincter and had a piano string feel, causing almost complete occlusion of the rectum. This piano string is very easily taken care of by doing a plastic operation, cutting the string in one place, and dilating the sphincter. The raw surface becomes very much enlarged, and triangular, with an apex high up. A pedicle flap is then cut from the buttock. This flap must, of course, be cut round, but it can easily be fitted to the apex because of the mobility of the mucous membrane. I have done this successfully in five cases. Multiple incisions heal because the muscle is only occasionally dilated. But a single incision, with wide interposition of tissue, prevents mucous membrane contact for the width of the flap, although the muscle is contracted. In all cases it is wise to advise postoperative routine delation treatment.

DR. J. F. MONTAGUE, New York: I believe I can supply some evidence in support of Dr. Buie's statement that the treatment by injection that he speaks of is often followed by tremendous fibrosis. I have made many sections of the tissues of the rectum and anus in connection with some research I am doing on pruritus ani. Some of these patients had received various injection treatments for the relief of the pruritus, and sections in these cases showed a tremendous fibrosis of the tissues injected. The sclerosis of this fibrous connective tissue could very well produce a stricture such as Dr. Buie described.

DR. RALPH W. JACKSON, Fall River, Mass.: Stricture of the rectum, whether syphilitic or inflammatory, is a difficult problem. Dr. E. J. Clemons of Los Angeles discovered that cases of nonmalignant strictures that can be reached through the anus can be treated effectively by chilling with carbon dioxid snow. It is packed into a rubber finger cot, to the base of which is attached a soft rubber catheter to allow escape of gas from the melting snow. Over the catheter is passed a rubber hose pipe till it impinges on the shoulder of the cot containing the snow. Thus the cot and its contents can be pushed into the lumen of the stricture, and the indurated tissue softens and remains soft. Long cylindric strictures may require several treatments. The snow in no way comes in contact with the tissues. Dr. Clemons offers no explanation of how the results are accomplished, but we saw the results.

DR. L. A. BUIE, Rochester, Minn.: I have a suggestion to offer in the handling of cases with colostomy. If the patient irrigates the bowel through the colostomy opening every morning and every evening, it will often be unnecessary to use the colostomy bag, and some patients can get along with just a single abdominal binder. I have found that colostomy and irrigation are better than ileostomy. In cases of ulcerative colitis in which a modified Brown operation has been done, the liquid character of the contents of the ileum makes it very hard to keep the field clean. In doing a colostomy in a case of stricture, we can usually make the opening in the sigmoid. It is a very good idea to have the opening at that point, because we can insert a tube through the abdominal opening and irrigate through the stricture. This will hasten the healing of the ulceration associated with the strictures, which is always one of the hardest things to control, and possibly permit an earlier restorative operation. I am very glad that Dr. Jackson mentioned Dr. Clemons' treatment. It is quite an advance, and I hope to try it.

India's Health Problem.—Out of forty million people living in Madras Presidency alone, it is estimated that more than thirty-six million are infected with hookworm disease. A widespread campaign of popular education is under way, and hospitals are incidentally giving treatment for the disease to all patients as a routine measure. A convincing experiment was undertaken among 298 students of the Madras Medical College who were skeptical of the prevalence of the disease, but were willing to be examined. Two hundred and forty-one were found infected; and it is safe to assume that as many qualified doctors, with improved health, will advocate hookworm control in those districts in which they undertake private practice.—Report of International Health Board of the Rockefeller Foundation, 1922.

THE INFLUENCE OF THE LIVER ON PHENOLSULPHONEPHTHALEIN EXCRETION *

RALPH H. MAJOR, M.D.
KANSAS CITY, KAN.

The frequent occurrence of low phenolsulphonephthalein excretion in certain persons without suspicion or evidence of renal disease must have attracted the attention of many observers. In our clinic, while studying the excretion of creatinin in health and in disease, a low excretion of phenolsulphonephthalein has been rather frequently observed in patients who excreted creatinin in a normal fashion, whose blood on chemical analysis and whose blood pressure were normal, and whose urine contained no albumin, sugar, casts or other evidence of renal impairment. Further tests in these normal controls showed, at times, a normal excretion of phenolsulphonephthalein, at other times, a marked diminution.[1]

TABLE 1.—*Results Following Injection of Phenolsulphonephthalein by Four Different Methods: Phenolsulphonephthalein Excretion at End of Two Hours*

Rabbit	Intravenous Injection Percentage	Subcutaneous Injection Percentage	Pleural Injection Percentage	Intrahepatic Injection Percentage	Kidneys
1	55	45	50	17.5	Normal
2	60	60	48	17	Normal
3	43	60	70	15	Normal
4	60	42	30	20	Normal
5	80	55	52	20	Normal
6	60	45	..	10	Normal
7	45	65	..	7.5	Normal
8	60	50	..	2.5	Normal
9	45	55	60	2	Normal
10	60	65	60	5	Normal
11	55	65	80	5	Normal
12	60	65	80	5	Normal
Average	59	56	75	10.5	

The low values in phenolsulphonephthalein excretion were seen more often following intravenous injection, but were also noted at times after intramuscular injections. Six normal persons, showing a two-hour urinary excretion of from 35 to 40 per cent., showed three and four days later an excretion of from 75 to 80 per cent., following intravenous injection.

Macht [2] has shown that the excretion of phenolsulphonephthalein may be markedly diminished following purgation with magnesium sulphate and with sodium sulphate. This interesting observation indicates an important source of error in interpreting the results of phenolsulphonephthalein excretion in patients who have received such medication.

In our patients and controls, however, this source of error was excluded, since none of them received saline purgatives, and the normal controls received no medication whatever. This led us to believe that at times there must be other important factors that can profoundly influence the rate of phenolsulphonephthalein excretion, factors that should be kept in mind when drawing conclusions in regard to kidney function.

Several years ago, Kendall [3] called attention to the marked affinity of liver tissue for phenolsulphonephthalein, and stated that when liver tissue and phenolsulphonephthalein were mixed together outside the body, the dyestuff was rapidly destroyed. Later, Braasch and Kendall [4] stated that "the destruction of phenolsulphonephthalein within the tissues not properly oxygenated is rapid and complete." Marshall and Vickers,[5] who have recently investigated the excretion of phenolsulphonephthalein, while emphasizing the marked affinity of the renal tissue for the dye, show also that the liver may take it up. From their experiments they conclude that the liver tissue does not destroy the dye, but holds it in some sort of combination from which it can be later released.

All of these observations indicate the necessity of further study of the affinity of certain tissues for this dye, which has such a widespread use in the study of renal function. As a further contribution to the study of this subject, a series of experiments has been carried out to investigate the possible rôle of the liver in influencing the rate of phenolsulphonephthalein excretion.

In the first series of experiments, twelve rabbits were used. In these animals the dye was first injected intravenously, then subcutaneously, then into the pleural cavity and, lastly, directly into the liver itself by means of a long, slender needle (26 gage) inserted just under the costal margin with the tip directed toward the diaphragm. One cubic centimeter of phenolsulphonephthalein was injected, and the urine was collected by a catheter at the end of two hours. The phenolsulphonephthalein determinations were made with a Dunning or Duboscq colorimeter, and each set of experiments was carried out under identical conditions. At the conclusion of the experiment, the animals were killed, the liver was examined for evidence of puncture, and the kidneys were studied grossly and microscopically for evidences of renal lesions.

A summary of Table 1 shows that while the average two-hour excretion is approximately the same when the dye is injected intravenously, subcutaneously or into the pleural cavity, the excretion after direct injection into the liver is much decreased, the average being only 15 per cent. of that observed following the other methods. Greater individual variations were observed in some instances, one animal (Rabbit 8) excreting twenty-four times as much after intravenous injection as it excreted following intrahepatic injection, and another animal (Rabbit 9) excreting twenty-two times as much when injected intravenously as when injected directly into the liver.

TABLE 2.—*Phenolsulphonephthalein Excretion Following Intrahepatic Injections*

Animal	2 Hours Percentage	24 Hours Percentage	48 Hours
1	17	5	None
2	15	7	None
3	5	Trace	None
4	5	None	None

Attempts at injecting the liver directly were not always successful, but such failures were always evident by an adequate excretion of phenolsulphonephthalein. One rabbit, in which an attempt was made to

* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Major, R. H.: The Use of Creatinin as a Test of Renal Function, J. A. M. A. **80**: 384 (Feb. 10) 1923.

2. Macht, D. I.: Concerning the Effect of Saline Purgatives on the Absorption and Excretion of Phenolsulphonephthalein, J. Urol. **7**: 271 (April) 1922.

3. Kendall, E. C.: The Fate of Phenolsulphonephthalein When Injected into the Animal Organism, J. A. M. A. **68**: 343 (Feb. 3) 1917.

4. Braasch, W. F., and Kendall, E. C.: Clinical Investigation of the Phenolsulphonephthalein Test, J. Urol. **5**: 127 (Feb.) 1921.

5. Marshall, E. K., Jr., and Vickers, J. L.: The Mechanism of the Elimination of Phenolsulphonephthalein by the Kidney, Bull. Johns Hopkins Hosp. **34**: 1 (Jan.) 1923

inject the liver, showed a two-hour excretion of 80 per cent. Necropsy showed that the needle had missed the liver entirely and had passed into the abdominal cavity. Another animal, presenting a two-hour excretion of 35 per cent., showed at necropsy that the liver had been torn, allowing the dye to escape into the abdominal cavity, from which it had been absorbed.

In order to determine whether the phenolsulphonephthalein when injected directly into the liver was destroyed or its excretion simply delayed, four animals were given intrahepatic injections, and the urine collected at the end of two hours, at the end of twenty-four hours and at the end of forty-eight hours. The results are shown in Table 2, and indicate that most of the dyestuff is destroyed.

TABLE 3.—*Phenolsulphonephthalein Excretion at End of Two Hours: Five Animals Injected Directly Into Portal Vein; Five Animals Injected Directly Into Inferior Vena Cava*

Injection into portal vein, percentage.....	25	15	20	25	0
Injection into inferior vena cava, percentage.....	70	70	60	70	70

In a second series of experiments, the animal was etherized lightly, the abdomen opened and the dyestuff injected directly into the portal vein. Certain difficulties were frequently encountered in carrying out these injections, the greatest source of error being produced by hemorrhage from the portal vein, permitting escape of the dyestuff into the peritoneal cavity, from which the phenolsulphonephthalein is readily absorbed. Five satisfactory experiments were carried out, however, and, as controls in five animals the dye was injected directly into the inferior vena cava under identical conditions. The results are shown in Table 3.

A summary of the results obtained in this series of experiments shows that injection of the dyestuff directly into the portal vein, which allows it to pass through the liver, is followed by a low urinary phenolsulphonephthalein excretion, and in one instance none was recovered from the urine. In the control animals, however, direct injection into the vena cava was followed by a very high phenolsulphonephthalein excretion.

COMMENT

The marked affinity of renal tissue for phenolsulphonephthalein is well shown by numerous clinical observations, and emphasized particularly by the observations of Marshall and Vickers.[5] Our experiments emphasize that liver tissue also possesses a marked affinity for this dyestuff. In the majority of patients, the dyestuff, when injected subcutaneously or intravenously, probably passes largely through the kidneys, which take it from the circulating blood and excrete it in the urine. Our experiments suggest, however, that if any considerable portion of the dyestuff in the blood stream passes through the liver, this organ may take it from the blood, and either hold it for several hours or destroy it. Such a process may explain the marked diminution in the phenolsulphonephthalein excretion noted in persons with no evidence of renal disease.

Birth Control.—The trouble with birth control is that it is practiced least where it should be practiced most.—Holmes: Studies in Evolution and Eugenics, New York, 1923.

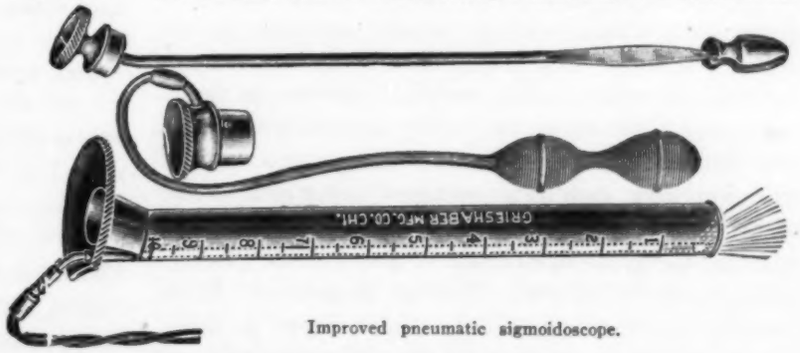
Clinical Notes, Suggestions, and New Instruments

AN IMPROVED PNEUMATIC SIGMOIDOSCOPE

J. RAWSON PENNINGTON, M.D., CHICAGO

This instrument is composed of two tubes—principal and auxiliary. It is made in three lengths, 8, 10 and 14 inches to the angle, and is ¾ and ⅞ inches in diameter. The proximal end of the principal tube is bent at an angle of about 22 degrees to permit the auxiliary tube, which contains the light carrier, to emerge from it independent of the window or obturator. This bending of the principal tube does not interfere with the perspective, yet permits the lamp to be carried through the auxiliary tube, and along the inside of the sigmoidoscope to its distal end, while either the obturator or the window is in position. It is made air tight by means of a ground plug which contains a glass window, and a tube to which may be attached an inflating bulb for distending the intestine with air. The instrument has the standard scale impressed on it.

To protect the mucous membrane, the distal end of the sigmoidoscope is flanged; the proximal end also contains a flange or ring 2¼ inches in diameter. The distal end of the auxiliary tube is left open; hence, the light rays from the lamp, which can be lighted from a dry cell battery or the electric light current controlled by a rheostat, are unobstructed.



Improved pneumatic sigmoidoscope.

The light carrier fits air tight, by a true taper socket, into the proximal end of the auxiliary tube.

The instrument is more easily introduced and manipulated, far less painful or disagreeable, less likely to get out of order, much more efficient and better illuminates the field for inspection than any other of which I have knowledge. It is made by the Grieshaber Manufacturing Company, Chicago.

31 North State Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ANTIDYSENTERIC SERUM (See New and Nonofficial Remedies, 1923, p. 287).

Parke, Davis & Co., Detroit.

Antidysenteric Serum.—From horses immunized against several strains of Shiga and Flexner types of dysentery bacilli. Marketed in packages of one syringe (*Bio. 120*) containing 10 Cc.; in packages of one vial (*Bio. 121*) containing 10 Cc.; in packages of one vial (*Bio. 122*) containing 20 Cc.

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SATURDAY, OCTOBER 20, 1923

TEMPORAL VARIATIONS IN CEREBRAL LOCALIZATION

Medical students have been taught for some time that the cerebral centers which originate voluntary motor impulses are located in the ascending frontal convolution immediately in front of the precentral fissure, a center being distinguishable for each muscular grouping of the body. The importance of this doctrine is exemplified in the modern surgical treatment of many cases of jacksonian epilepsy. By trephining the skull over the affected center and removing the source of irritation there, such as a meningeal tumor or a spicule of bone, some phenomenal cures have been instituted, attesting the great significance of the doctrine of cerebral localization of motor function in practice. More recently, however, physiologists have begun to question somewhat the validity of the experimental evidence commonly adduced in this connection. There were reports that the responses elicited from a given cortical center were not always the same; thus, if a point giving a certain response was stimulated immediately after a previous stimulation, the result in respect to motor response was sometimes altered. In other instances observed by competent experimenters, successive stimulations of a cortical point resulted in dissimilar movements, after intervening stimulation of other areas. Some of these "deviations of response" involved changes as great as that from finger to shoulder movements and even overlapping of the face and arm areas.

Thus there has arisen some tendency to discredit anatomic localization of the motor function centers in the brain. Summarizing the situation, Lashley [1] of the University of Minnesota has pointed out that possibly each cortical point is capable of calling out a primary reaction which is relatively stable, although capable of temporary modification: it is possible that the reaction elicited from each motor point is wholly dependent on previous conditions of stimulation, and that apparent anatomic localization within the motor area arises only through the relative constancy of dynamic conditions within the time limits of the experiment; or the truth may lie somewhere between these extremes, in a gross anatomic localization within which the finer movements are determined by transient physiologic conditions.

In Lashley's own recent observations of the effects of electrical stimulation in the region of the precentral gyrus of the monkey, in each test the reactions were almost constant, subject to slight deviations resulting from the order of stimulation. In the different tests, the general fields from which movements of the face, arm and leg segments were elicited tended to remain constant, although the borders of the field were inconstant. Within the arm area, stimulation of the same point in different tests resulted in widely different movements, and at different times the same movement was obtained from widely separated and shifting areas. The results suggest that within the segmental areas the various parts of the cortex may be equipotential for the production of all the movements of that area, and that the particular movements elicited in any test depend on the temporary physiologic organization of the area rather than on any point-for-point correspondence between pyramidal and spinal cells. It cannot be denied, however, that there is some morphologic basis for the differentiation of function in the larger segmental divisions of the gyrus.

1. Lashley, K. S.: Temporal Variation in the Function of the Gyrus Precentralis in Primates, Am. J. Physiol. **65**: 585 (Aug.) 1923.

NAVY DAY

Last year the Navy League, a civilian organization created for the purpose of promoting interest in the Navy, chose October 27, the birthday of Theodore Roosevelt, as Navy Day. Suitable ceremonies ashore and afloat will be held on this day in order to effect a better understanding of the Navy. All ships, navy yards and naval hospitals will keep open house so that citizens may familiarize themselves with the work.

During the war, when the Navy transported 2,079,880 men to Europe without the loss of a single man by enemy submarines or other vessels, there were 1,720 reserve medical officers in the Navy, 1,630 of whom have since returned to civil life. The services rendered by these officers were of untold benefit to the country. The naval medical officer must possess a good working knowledge of general medicine and surgery, but he has ample opportunity to take up the study and practice of one of the specialties. His vocation, however, is a special field of medical work. In naval practice the physician is confronted by problems peculiar to the Navy. The Navy consists of its ships, its navy yards for the building, repair and upkeep of these ships, its naval training stations for the training of recruits, and its naval hospitals for the treatment of the sick. The modern battleship, with its complement of more than a thousand men, is a compact community in which the medical officer is concerned with questions of food and

water supply, sewage and garbage disposal, the lighting of passageways, living quarters and workshops, heating and ventilation, the protection of the crew from communicable diseases, the maintenance of the general health of the men, and the care of the sick. To be successful, the medical officer must keep himself thoroughly informed of the advances made in medical science and in sanitation; he must be familiar with the latest information relative to the cause and prevention of disease; the modern means of lighting and ventilation, and special treatment of special diseases; he must have a knowledge of modern gas warfare, aviation medicine, and the special hygienic factors that pertain to the submarine and to deep-sea diving. The competent naval medical officer must be ready at any time to undertake to the best of his ability the solution of any problem that he may encounter in his official capacity. The wide range in the character of the work in this special field of medical activity, and the responsibilities entailed, call for high professional standards and ready adaptability. Sea duty is diversified. The newly appointed medical officer may be ordered to duty as the only medical officer of a small naval vessel, which may take him to interesting parts of the world—to the Mediterranean, the West Indies, Central America or China. As the battleship is designed primarily for battle, the medical officer is concerned in the preparations for battle. For this purpose the ship is equipped with certain battle dressing stations behind armor, and supplied with the necessary appliances to care for the wounded during an engagement. Definite plans are made for the conduct of the medical department of the ship during battle. The medical officer has on board ship to assist him a detachment of the Hospital Corps of the Navy. He is responsible for the instruction of its members and consequently is interested in their advancement to higher ratings.

If the young medical officer has special qualifications, he may be ordered to duty on one of the hospital ships, of which at present the Navy has four, the *Relief*, the *Mercy*, the *Comfort* and the *Solace*. These vessels are complete floating hospitals with all the conveniences and equipment found in any modern hospital on shore. They carry a full staff of medical officers, most of whom are specialists in various branches of medicine. To the hospital ship are sent the sick of the fleet—those who are critically ill, those whose ailments will require a long time to cure, such surgical cases as demand special operative treatment, all wounded from engagements on board ship, or the wounded from shore expeditions. The hospital ships are ordered from place to place to meet the demands for their services in connection with the employment of naval forces.

In connection with Navy Day, it is of interest to note that the Navy Department now is preparing a bill to present to Congress giving exactly the same promotion, at exactly the same time, to medical officers as is given to line officers. If this bill is adopted, a medical officer entering the Navy will advance through the various ranks into the rank of rear admiral with the lieutenant of the line with whom he takes rank on being commissioned. Thus, equal promotion with one's contemporatries would be guaranteed.

CLIMATE AND BUBONIC PLAGUE

About ten years ago, the spread of bubonic plague completed the encircling of the globe when the disease appeared for the first time in one of the southern cities of the United States. Although plague has been observed in frigid and temperate climates, it has long been recognized that it flourishes best in moderately warm, dry weather, such as is found in the tropics and subtropics from the end of winter to the rainy season, or usually from January to June. The seasonal periodicity is not absolutely constant, yet it has been noticeably frequent. Elevation per se seems to be of no importance, as the disease has been reported at both sea level and at high altitudes.

According to current opinion, the plague is largely communicated by means of fleas that have become infected by living on human beings or on rats. Hence it may be said that the three factors man, rat and flea must be considered together in any epidemiologic study of the disease. An officer[1] of the United States Public Health Service, who has made a study of the accumulated records of the past quarter century, points out that during this term of years bubonic plague has spread alike to countries that endeavored to prevent its entrance and to those that made no such efforts. He states also that the disease has failed to spread to colder countries that made no effort to prevent its entrance, as well as to those which, like our own North Atlantic seacoast, have made strenuous effort to prevent its ingress.

The epidemiologic fact that bubonic plague never has extended in a threatening way to countries where the climate is cold or relatively cold challenges notice. Robertson has called attention to the fact that, whereas man and the rat do not hibernate in any climate, the adult flea rarely passes alive through the cold of winter. The species, he states, is prevented from dying out in cold countries by the ability of the immature forms to exist for periods that may range to more than a year. These long pupal stages are seen only in cool or cold weather. Robertson maintains that bubonic plague is essentially a disease of hot climates, and, having been introduced into tropical countries, it tends to persist indefinitely. In countries with a mean midwinter temperature of 45 F. or below, the disease is occasional, accidental and distinctly self-limited, and it seems possible for it to occur in the colder regions only for short periods under unusual conditions. In view

1. Robertson, H. M.: A Possible Explanation of the Absence of Bubonic Plague in Cold Countries, Pub. Health Rep. **38**: 1519 (July 6) 1923.

of all these circumstances, Robertson has concluded that the seasonal prevalence of fleas regulates the spread of bubonic plague; otherwise it becomes necessary to find at least some equally reasonable explanation for the absence of bubonic plague in cold countries. We are warned, however, that, interesting as this speculation may be, when one considers the long past history of the disease, the period of observation on which Robertson's statistical inquiry is based is probably far too short to justify final conclusions.

SLEEP

What is sleep? Any one who attempts to secure an answer from treatises on physiology is likely to find the information unsatisfactory. The problem has for the most part been relegated to the psychologists. Pawlow [1] has remarked that when the physiologist leaves the study of the simpler parts of the central nervous system, which he has investigated by observation of reflexes, and proceeds to the higher parts, especially the cerebral cortex, his methods suddenly change; he tends to introduce psychologic ideas derived from his own consciousness. The consequence seems to have been a paucity of knowledge respecting the cause of sleep, a subject to which Kleitman [2] has lately called attention. Probably the most popular explanation of the mechanism of falling asleep has assumed an anemia of the brain due to fatigue of the vasomotor center at the end of the day's activities. Innumerable schemes to "draw away blood" from the brain so as to create a cerebral anemia supposedly favorable to sleep are familiar to every physician. Who, indeed, has not now and then attempted to apply the idea in advice to a patient complaining of insomnia? It will be a disappointment to many, therefore, to learn that, contrary to Mosso's assertion, there is probably a plethora rather than a deficit of blood in the brain during sleep. As for the vasomotor center, furthermore, in Kleitman's observations at the physiologic laboratory of the University of Chicago it was impossible to detect any loss of tone of the vasomotor center even after 115 hours of wakefulness, or seven times the normal sixteen-hour period. The low blood pressure obtained during the insomnia periods was partly due to a slowed heart, and both the slowed heart and low blood pressure were due to muscular relaxation in the lying position, and were absent when the subject was seated.

Another favorite theory of the genesis of sleep involves the alleged "autointoxication with the products of wakefulness." Chemical compounds supposedly arising as the result of fatigue, fatigue toxins, have lost their popularity of late as sponsors for bodily changes. Kleitman found that a large variety of measurable factors—blood sugar, alkali reserve of the blood and plasma, percentage of hemoglobin, percentage of corpuscles, red and white blood cell count, body weight, basal metabolic rate, appetite, temperature, ability to name letters and to do mental arithmetic—showed no variations from normal during the period of sleeplessness. There is no evidence of an intoxication. Furthermore, while it is true that fatigue will accelerate the onset of sleep, a person can fall asleep when not fatigued at all, and idlers have no difficulty in falling asleep at the usual hour, or at any hour.

The onset of sleep is probably due to complete muscular relaxation, voluntary or involuntary. We have failed, heretofore, to realize the extent to which the impulses pouring into the brain come from the muscles, tendons and joints, proprioceptive impulses as they are often termed, in addition to the visual, auditory and tactile sensations that usually play on the sensorium. Kleitman concludes that when a person lies down the visual sensations soon become monotonous, and muscular relaxation, removing the greater part of the proprioceptive impulses, precipitates what we call sleep.

1. Pawlow, I. P.: Naturwissenschaft und Gehirn, Ergebn. d. Physiol. **11**: 345, 1911.
2. Kleitman, N.: Studies on the Physiology of Sleep, I, The Effects of Prolonged Sleeplessness on Man, Am. J. Physiol. **66**: 67 (Sept.) 1923.

Current Comment

THE WORLD'S DAIRY CONGRESS

The month of October has witnessed the convocation of the World's Dairy Congress in this country, with a series of sessions attended by delegates and visitors from far and wide. One object of this organization, in which the United States has taken the initiative, and which was authorized by Act of Congress, has been to bring together the forward-looking leaders who are shaping the trend of the dairy industry. To the medical profession the meeting of such a group has not a little significance and interest, because the purposes of the dairy congress include consideration of the influence of a wise use of milk and its products on national health, and the vital importance of the part which they play in human physical and mental development. Thus, one of the public conferences, at the sessions in Syracuse, included a symposium on the nutritive value of milk and enlisted the cooperation of numerous investigators and clinicians of note in the science of nutrition and its practical applications. Another group discussed the methods of improving and protecting the milk supply; others considered the chemistry and bacteriology of milk, and the problems of transportation and marketing. These examples are sufficient to indicate the truly broad scope of the congress and to demonstrate that the purely commercial aspects of the dairy industry by no means overshadowed the scientific and educational problems. Great Britain and her dependencies, Scandinavia and central Europe, South America and Central America, Japan and China were represented in the proceedings. The importance of milk can scarcely be overemphasized. There is probably no other food so vital to our national health and efficiency. The lesson

of the universal shortage of milk all over Europe owing to the depletion of dairy herds is still before us. It is a wholesome circumstance that the various aspects of the production, sanitation and distribution of milk and its varied products should be the subject of conferences that bear testimony to the dignity of the subject.

SPIRITUAL HEALING

Australia has been undergoing one of those periodic visitations of religious healing which from time to time sweep over the world like epidemics. A healing mission was established and attracted large numbers of enthusiastic believers. In this connection the editor of the *Health Forum*, the official organ of the Public Health Association of Australia, calls attention to a usual feature of such work: the lack of interest shown by the leaders of the religious mission in the question of the prevention of disease. The literature issued by the mission lays stress on the idea that disease is opposed to the divine order of things, yet no attention is paid to prevention and elimination, all of the stress being placed on the healing of disease after it has occurred. Patients with open tuberculous disease attended the mission to be relieved of their subjective symptoms, but were permitted to proceed about their daily lives, spreading infection without regard for others. It is unfortunate that the same passion and energy that are shown in promoting such ventures cannot be applied to legitimate, scientific methods for disease control. Diseases that are dependent on community control can be eliminated only by a united community spirit. The *Health Forum* wisely indicates that the creation of such a spirit does not depend entirely on the medical profession and will not be achieved until teaching by non-medical organizations is directed toward prevention rather than mere healing.

THE MANUFACTURE OF SERUMS AND VACCINES

Trade Information Bulletin 149, just issued by the Chemical Division of the Bureau of Foreign and Domestic Commerce, presents a short survey of world markets for medicinal and pharmaceutic preparations, antitoxins and vaccines. According to the bulletin, Canada takes more of our serums, antitoxins and vaccines than any other country. In Norway and Sweden the market is showing an improved tone, but Germany is still obtaining the largest share of the Scandinavian business. The Danish government manufactures the vaccine used for animals, and furnishes it at cost of production. Consequently, American vaccines find no market there. American exporters have been able to sell medicinals to Holland in spite of the proximity of that country to European centers of production. It is our third largest European market. The United States does not supply any animal vaccine to Belgium. It is obtained from French or German laboratories, and is supplied at the expense of the government. Medicines and drug solutions are in large demand in Great Britain, and American products, particularly of the shotgun or "patent medicine" type, occupy a prominent place in the market. Ireland receives about 40 per cent. of her "patent medicines" from the United States, and 50 per cent. from Great Britain. France is a relatively small purchaser of our preparations, owing to the fact that that country meets its requirements from domestic manufacture. Germany, of course, is a poor market for American medicinals owing to the preeminent position of German chemistry in Europe. Small amounts of serums and vaccines have been exported to Spain; Italy is largely supplied by Germany. Nearly 90 per cent. of the drugs imported into South Africa come from the United Kingdom, while about 6 per cent. come from the United States. In Latin America the United States is practically everywhere the principal source of supply.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Electric Chair Instead of Hanging.—The Inzer bill, which would abolish hangings at Kirby prison by June 1, 1924, and substitute the electric chair for executions, passed the house, September 21, by a vote of 53 to 10.

Hospital News.—The $86,000 recently appropriated by the state legislature for the home for mental inferiors in Alabama will be used by the new institution at Tuscaloosa, of which Dr. William D. Partlow, Mount Vernon, superintendent of the Alabama Insane Hospital, has charge.

Bill Passed to Abolish Tuberculosis Commission.—Following charges of graft, extravagance and inefficiency made by Senator De Waddell against the state tuberculosis commission in the course of debate on the floor of the senate, September 28, a bill to repeal the act creating the commission passed by a vote of 18 to 11.

CONNECTICUT

Health Commissioner Resigns.—Dr. Joseph M. Klein, former commissioner of public health of New Britain, has gone to Los Angeles to reside.

Typhoid Epidemic.—Twelve cases of typhoid fever were admitted, October 4, to the Stamford Hospital from the Laurel Reservoir Camp. It is believed that the disease was spread by a carrier; the remaining 140 men working on the reservoir were inoculated with antityphoid vaccine.

DISTRICT OF COLUMBIA

New Laboratories for Freedmen's Hospital.—The contract was awarded, October 4, for the construction of a fireproof building to house the pathologic laboratories of Freedmen's Hospital, Washington. The building will cost $57,000 and contain a necropsy room that will seat 100 students, pathologic and bacteriologic laboratories and a roentgen-ray department.

Wapiya Elects.—At the annual meeting of the Wapiya (Medicine Men) in Washington, October 10, the following officers were elected: president, Dr. Everett M. Ellison; vice president, Dr. Oscar B. Hunter, and secretary-treasurer, Dr. Frank A. Hornaday. About 100 physicians and surgeons of Washington who are members of the University Club belong to the Wapiya.

GEORGIA

Physician Sentenced.—According to reports, Dr. W. S. Glenn of Columbia County was convicted in the supreme court the latter part of September for practicing without a license and sentenced to a term in jail.

State Board Examiners Appointed.—At the meeting of the state board of medical examiners, October 10, the following officers were elected: president, Dr. Jarrett W. Palmer, Ailey; vice president, Dr. Nichols Peterson, Tifton, and secretary-

treasurer, Dr. Charles T. Nolan, Marietta. Governor Walker appointed Dr. Burr T. Wise, Plains, a member of the board in place of Dr. Marcus F. Carson, Griffin.

Physician in Hall of Fame.—The Georgia assembly more than twenty years ago voted to place a statue of Dr. Crawford W. Long in the Hall of Fame, Washington, D. C., but little was done about it until Dr. Joseph Jacobs founded the Crawford W. Long Memorial Association early this year (The Journal, January 20, p. 188). The arrangements have now been completed; most of the $10,000 necessary has been contributed, and the remainder is assured. J. Massay Rhind, Brooklyn, has been retained as sculptor of the statue, which will be carved from Georgia marble. It is expected that the memorial will be ready for the formal unveiling at Washington by June, 1924.

ILLINOIS

Society Condemns "State Medicine."—The Adams County Medical Society, at its October meeting, unanimously adopted a resolution condemning state and federal activities in the field of medicine, except in the control of communicable diseases.

Chicago

Chicago Medical Society.—At the annual meeting of the Chicago Medical Society, October 10, Dr. Archibald Church was installed as president to succeed Dr. Hugh MacKechnie, who was presented with a diamond ring by the society. Dr. Jeremiah H. Walsh is president-elect for 1924.

Personal.—Dr. David J. Davis, University of Illinois, has been appointed consulting pathologist and bacteriologist to the newly reorganized St. Elizabeth Hospital, Chicago.——Drs. Willis O. Nance, Dean Lewis, Joseph L. Miller and Lawrence Ryan, Chicago, all former Kewanee men, furnished the program for the Tri-County (Henry, Knox and Warren) Medical Convention held in Kewanee, October 10.

The Cradle Society.—Dr. Henry Dwight Chapin, New York, gave an illustrated public lecture on "Improved Methods of Child Saving" at Evanston, October 7, before the Cradle Society, which aims to offer a home to new-born babies deprived of their birthright. Since the home was opened in the spring, at 2039 Ridge Avenue, Evanston, forty-two babies have been placed in homes.

Hospital News.—Construction work on the addition to Lakeside Hospital has been started. This structure will be erected at a cost of $500,000, and will have a capacity of 125 beds.——Additional ground has been purchased for the erection of a new building at the Home for Destitute Crippled Children.——The sixty-fifth anniversary of the Illinois Eye and Ear Infirmary was celebrated, October 12-13. Lectures and clinics by former interns and a home-coming banquet were features of the two-day program.

INDIANA

Tuberculosis Clinics Resumed.—The tuberculosis clinics conducted by the Tippecanoe County Tuberculosis Association have been resumed and will be held twice monthly in the future. The first clinic of the season was held at the Home Hospital, La Fayette, October 4.

Course of Clinical Lectures.—The twenty-fourth annual course of clinical lectures at the pathologic department of the Central Indiana Hospital for the Insane, Indianapolis, commenced, September 22, and will continue until Feb. 28, 1924. There are five courses: psychopathology, psychiatry and neurology, psychiatry, abnormal psychology and a course to practitioners and students of law.

IOWA

Personal.—Dr. Evan S. Evans has been appointed city physician of Grinnell to succeed Dr. Lewis A. Hopkins, who resigned.——Dr. Arthur C. Selmon, Columbus Junction, has sailed with a relief expedition to Japan on the Chinese ship *Shin Min-Abo*.——Dr. Oscar A. Dahms, former president of the Davenport school board, has resigned.——Dr. David S. Fairchild, Clinton, editor of the *Journal of the State Medical Society of Iowa*, has been named chairman of the national health examination movement in Iowa, which was originated by the National Health Council in cooperation with the U. S. Public Health Service.

MARYLAND

De Lamar Lectures.—Dr. Lindsay R. Williams, managing director of the National Tuberculosis Association, gave the first of the public lectures under the Joseph de Lamar series at the Johns Hopkins School of Hygiene and Public Health, October 8. His subject was "The Methods Employed in the Prevention of Tuberculosis and Their Results."

Personal.—Dr. Martin F. Sloan has been elected president of the Tuberculosis Association of Maryland, to succeed Dr. Henry Barton Jacobs, resigned.——Dr. John S. Fulton, commissioner of health for Maryland, Dr. Robert H. Riley, Dr. C. Hampson Jones, commissioner of health for Baltimore City, and Dr. John F. Hogan, of the bureau of communicable diseases, Baltimore City Health Department, were appointed delegates by Governor Ritchie to the convention of the American Public Health Association in Boston, October 8-11.——Dr. William H. Welch, director of the School of Hygiene and Public Health of Johns Hopkins University, has been given an honorary degree by Cambridge University and has been elected honorary member of the Royal Society of Medical and Natural Sciences at Brussels.——Dr. J. Molyneux Hamill, representative of the British government to the World Dairy Congress, held in Washington, D. C., the week of October 1, was recently in Baltimore as a guest of Dr. C. Hampson Jones, health commissioner, to study the method of protecting the milk supply.——Prof. Hans Driesch of the University of Leipzig gave a lecture on "Mind and Body" in the medical amphitheater of Johns Hopkins Hospital, October 16.——Dr. Lloyd H. Ziegler, former instructor in clinical psychiatry at George Washington Medical School, has accepted a position as medical house officer and assistant in psychiatry at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital.

MASSACHUSETTS

Ether Day.—The fiftieth anniversary of the founding of the training school for nurses of the Massachusetts General Hospital, Boston, was celebrated in connection with the seventy-seventh anniversary of Ether Day, October 15-16. Dr. Henry P. Walcott presided, and Dr. Winford Smith, director of Johns Hopkins Hospital, Baltimore, and Dr. Richard C. Cabot, professor of clinical medicine, Harvard Medical School, Boston, gave addresses.

Boston University School of Medicine.—At the opening exercises of the university, it was announced that Dr. Wesley T. Lee, professor of dermatology, will succeed the late Dr. Edward E. Allen as registrar of the medical school. Only seventy-two students from 300 could be accepted because of the limited facilities. Dr. Alexander S. Begg, the new dean, presided. President Lemuel H. Murlin, who has just returned from abroad, spoke to the students on the social function of a physician. For the first time in more than forty years, Dr. John P. Sutherland, dean emeritus, was not present at the opening of school. Other speakers were Dr. Joseph Emmons Briggs of the board of trustees and Dr. Fred Piper of the alumni.

MICHIGAN

Court Upholds Board of Health.—The state supreme court ruled, October 1, that local health boards have the power to require children to be vaccinated when there is danger of an epidemic of smallpox. This decision settled the controversy between the Lansing health board and the board of education following the school board's refusal to comply with the health board's order that all children must be vaccinated. The board of health secured a writ of mandamus in the circuit court to compel the board of education to comply with the order. The latter board appealed. The supreme court ruled that the health board under Act 5081, 1915, has the necessary police power to take steps to prevent the spread of disease.

Public Health Meetings.—The fifteenth annual meeting of the Michigan Tuberculosis Association was held in Flint, October 3-4, in joint session with the Michigan Trudeau Society and the Genesee County Medical Society. Those who addressed the meeting were Dr. Robert Woodhouse, president of the Canadian Tuberculosis Association; Dr. Caroline Hedger, Elizabeth McCormick Fund, Chicago, and Dr. Francis Trudeau, Saranac Lake, N. Y.——Michigan's joint committee on public health met at Ann Arbor, October 8. The committee, which directs the presentation to the people of the state of accurate scientific information concerning public health problems is composed of Prof. M. L. Burton, president; Dr. Richard M. Olin, commissioner of health; Dr. William T. Dodge, Big Rapids; Dr. John B. Jackson, Kalamazoo; Dr. Frederick C. Warnshuis, Grand Rapids, and Drs. B. D. Harison and Andrew D. Biddle of Detroit. The university was represented by Dean Hugh Cabot of the medical school, Dr. John Sundwall of the public health department, and Prof. W. D. Henderson of the extension division, under whose direction the health lectures are given.

MINNESOTA

State Medical Meeting.—At the annual meeting of the Minnesota State Medical Association in St. Paul, October 10-12, the following officers were elected for the ensuing year: president, Dr. Archibald MacLaren, St. Paul; vice presidents, Drs. Edward T. Sanderson, Minneota; Frank J. Hirschboeck, Duluth, and Charles W. Bray, Biwabik; secretary, Dr. Carl B. Drake, St. Paul, and treasurer, Dr. Frederick L. Beckley, St. Paul. The next meeting of the association will be held in St. Cloud in October, 1924.

MISSOURI

Kansas City Academy of Medicine.—Dr. Jefferson D. Griffith, Kansas City, has offered a prize of $100 for the best paper read before the Kansas City Academy of Medicine. The award will be made at the last meeting of the year, May 2, 1924.

Follow-Up Work in Kansas City.—For the last two years the Tuberculosis Society of Kansas City, in cooperation with the Missouri State Sanatorium for Tuberculosis, has been doing follow-up work. Patients discharged from the sanatorium are reported to the society, which then investigates their home environment and reports at regular intervals the patients' progress.

NEVADA

State Medical Meeting.—The twentieth annual meeting of the Nevada State Medical Association was held in Reno, September 28-30. Dr. Ray Lyman Wilbur, San Francisco, President of the American Medical Association, spoke on "The Earth and the Physician." Dr. Horace J. Brown, Reno, secretary-treasurer of the association, was elected president for the ensuing year; Drs. William M. Edwards, Yerington, and Amos C. Olmsted, Wells, vice presidents, and Dr. Claude E. Piersall, Reno, secretary-treasurer. Dr. George L. Servoss, Reno, was elected associate editor of the *California State Journal of Medicine*. Dr. Anthony Huffaker, Stewart, presided in the absence, owing to illness, of President John L. Robinson.

NEW HAMPSHIRE

Dartmouth Medical School.—The one hundred and twenty-fifth anniversary of the Dartmouth Medical School, Hanover, was celebrated, October 5-6. Dr. Nathan Smith founded the school in 1797. More than one fifth of the living graduates of the school were present. Prof. Harrie Sheridan Baketel, New York, was elected president of the alumni association. Speakers at the alumni banquet were Drs. Edwin J. Bartlett, '72, Hanover; Harry C. Martin, '98, Springfield, Mass.; Howard M. Clute, '14, Boston, and the president of the college, Ernest Martin Hopkins, LL.D. A resolution was adopted favoring the introduction of a four-year medical course at the college. The graduates proposed the addition of two years to the present courses and referred their desires to the trustees and faculty who will determine the feasibility of the plan immediately.

NEW JERSEY

Labor Commissioner Appointed. — Governor Silzer has appointed Dr. Andrew F. McBride, former mayor of Paterson, as commissioner of labor to succeed the late General Bryant.

Proposed Medical Legislation.—Dr. Wells P. Eagleton, Newark, president of the state society, called a special meeting of the welfare committee of the state medical society with presidents and secretaries of county medical societies at Trenton, September 30, to prepare the program for medical legislation to be presented at the next session of the state legislature. The venereal disease control bill will be reintroduced, and a sterilization bill for feebleminded, habitual criminals and the chronic insane. The advisability of introducing an amendment to the Workmen's Compensation Act to give to the injured workman the right to employ his own physician, was discussed.

NEW YORK

Hospital News.—The site for a new building which will be erected next year has been purchased by St. Joachims' Hospital, Watertown, at a cost of $23,000. —— The formal opening of the Buffalo City Hospital, Buffalo, took place, September 30-October 7, inclusive. The dedication of the Ernest Wende Building (in memory of Dr. Ernest Wende, who died in 1910) was held, Sunday, September 30. Dr. William A. Pusey, President-Elect of the American Medical Association gave an address, and a dinner was held, October 4, by the eighth district branch of the state medical society, at which Drs. Orrin S. Wightman, president of the state medical society, Samuel P. Capen, LL.D., chancellor, University of Buffalo, Matthias Nicoll, Jr., state commissioner of health, Franklin H. Martin and Carl Beck, Chicago, gave addresses, and Dr. Hugh H. Young, Baltimore, was the guest of honor.

Progress at the University of Rochester.—The foundations are now being laid for the medical school and hospital building of the University of Rochester. The building will be six stories high, and will house both medical school and hospital. It is expected that students for the first year's work in medicine will be received in the autumn of 1925. A differentiation between medical and dental students will not be made at all in the first year, and only to a limited extent in the second. The faculty appointments so far made are as follows: dean and professor of pathology, Dr. George H. Whipple, formerly dean and professor of research medicine at the University of California; professor of biochemistry, Walter R. Bloor, Ph.D., formerly professor of biochemistry at the University of California; professor of anatomy, Dr. George W. Corner, associate professor of anatomy at Johns Hopkins Medical School; professor of bacteriology, Dr. Stanhope Bayne-Jones, associate professor of bacteriology at Johns Hopkins Medical School; professor of gynecology and obstetrics, Dr. Karl M. Wilson, Baltimore; professor of medicine, Dr. William S. McCann, associate professor of medicine, Johns Hopkins Medical School; director of the Strong Memorial Hospital, Dr. Nathaniel W. Faxon, formerly assistant director of the Massachusetts General Hospital; professor of surgery, Dr. John Jamieson Morton, Jr., assistant professor of surgery at Yale Medical School, and superintendent of nurses, Helen Wood of Barnes Hospital, St. Louis. A contract has been made by the university with the city of Rochester with reference to the erection and maintenance of a municipal hospital of 240 beds adjacent to the Strong Memorial Hospital. By this contract the university agrees to deed to the city about 26 acres of land, and to give to the city, without cost, the services of the professional staff. Resident physicians, interns and nurses will be provided for the city hospital at cost by the university; also heat, laundry service and food.

New York City

Harvey Society Lecture.—Walter R. Bloor, Ph.D., professor of biochemistry at the University of Rochester School of Medicine and Dentistry, will deliver the second Harvey Society lecture at the New York Academy of Medicine, November 3. His subject will be "The Utilization of Fat in the Animal Body."

Personal.—Dr. Robert S. Carroll, director of the Highland Hospital, has been granted one year's leave of absence for study and travel in Europe.——Dr. J. Herbert Bliss, who has recently completed his internship in the Methodist Episcopal Hospital, Brooklyn, has been appointed a fellow in surgery at the Mayo Foundation, Rochester, Minn.——Dr. Simon Tannenbaum, superintendent of the Beth David Hospital, has been appointed medical director of the Hadassah Hospitals and Clinics in Palestine. He will sail in November.

Medical Lectures in Brooklyn.—Under the auspices of the Medical Society of the County of Kings, the first of the fall series of practical lectures was delivered on October 5. The course comprises ten lectures of interest to the general practitioner and is a part of the free postgraduate medical education under the direction of a joint committee of the Long Island College Hospital and the Medical Society of the County of Kings. Further information regarding these lectures may be obtained from the dean of the Long Island College Hospital, Henry Street, Brooklyn, N. Y.

Free Graduate Lectures.—Additional speakers for the course of free lectures given Friday afternoons at the New York Post-Graduate Medical School (THE JOURNAL, September 23, p. 1029) and their subjects, are as follows: November 9, Dr. Herman O. Mosenthal, "Insulin in the Treatment of Diabetes Mellitus"; November 16, Dr. Lester J. Unger, "Blood Transfusion"; November 23, Dr. Roger H. Dennett, "Simplified Infant Feeding"; November 30, Dr. Henry H. Whitehouse, "A Plea for a Broader Conception of Dermatology"; December 7, Dr. Fred H. Albee, "Reconstruction Surgery"; December 14, Dr. Robert H. Halsey, "Recent Advances in the Diagnosis and Treatment of Diseases of the Heart"; December 21, Dr. Harold S. Vaughan, "Cleft Palate," and December 28, Dr. Charles J. Imperatori, "The Limitations of Bronchoscopy and Esophagoscopy."

OHIO

Physician's Estate Willed to Medical School.—By the will of Dr. John C. Mackenzie, Cincinnati, who died, September 19, provision is made for his entire personal estate to go, eventually, toward maintaining a chair of pathology in the Medical Department of the University of Cincinnati. The estate is valued at about $100,000.

Toledo Hospital News.—The East Side Hospital will erect a new hospital at the corner of Starr Avenue and Main Street. It is expected that the new building will be ready for occupancy by July, 1924.——Work on the new hospital building for the Municipal Hospital is progressing slowly. Owing to necessary changes in the plans, it is thought that structure will not be ready for occupation until about the first of the year.——The new addition to the Flower Deaconess Home and Hospital, has been completed.

Personal.—Dr. Arthur W. Laird, Marenisco, Mich., has been appointed public school physician of the schools of Canton.——Governor Donahey has appointed Dr. Joseph L. Johnson, formerly United States minister to Liberia, as a trustee of Wilberforce University, Columbus.——Dr. Nuno Guerner, São Paulo, Brazil, and Dr. Chang H. Han, Tsinghau, China, have been several weeks with Dr. Emery R. Hayhurst of the Ohio State University Department of Public Health. They have been sent to the United States by their respective governments to study public health under the auspices of the International Health Board.——Dr. Stephen S. Halderman, Portsmouth, former president of the state medical association, was presented with a silver set by the Hempstead Academy of Medicine on the occasion of his golden wedding anniversary, recently.——The International Health Board has awarded scholarships at Johns Hopkins School of Public Health, Baltimore, to five Ohio physicians: Drs. Thomas W. Mahoney, Columbus; Arlington Ailes, Springfield; Clarence D. Barrett, Wooster; Charles Koenig, Toledo, and Roll Markwith, Akron. The scholarships are for one year, and include traveling expenses, maintenance and college fees.

PENNSYLVANIA

Personal.—Dr. Robert A. Kilduffe, Jr., Pittsburgh, has accepted an offer to take charge of the Los Angeles branch of the Pacific Wassermann Laboratories.——Dr. William E. Fawcett, Oil City, has been appointed superintendent of the Pureair Sanatorium, Bayfield, Wis., to succeed Dr. John M. Conroy, who has associated with Dr. Frank C. Studley in the management of the Riverside Hospital, Milwaukee.——Dr. John S. Anderson, Greensburg, has been appointed medical director of Westmoreland County to succeed Dr. Robert E. Lee McCormick, Irwin, resigned.——Dr. William S. Bertolet has been appointed medical director of the Reading Hospital. ——Dr. Charles E. Hannan, who has been appointed chief of the orthopedic service in the Memorial Hospital, Johnstown, will be succeeded in the surgical service by Dr. Benton E. Longwell.

The State Housing Rules.—The advisory health board has adopted new housing regulations, applicable in all municipalities and townships of the state. The regulations define tenement houses as all buildings "occupied or designed for occupation by three or more families, living in separate apartments and doing their cooking on the premises," thus including apartment houses, apartment hotels and flats. The new regulations state that in tenement houses each family must be provided with a separate toilet; that proper light and ventilation opening to the outside air in tenement, lodging and boarding houses must be provided, and that all living and sleeping rooms must have ample natural light and outside ventilation and be provided with windows easily operated. Sleeping rooms must have 12 square feet of window area, 70 square feet of floor space and 600 cubic feet of air space.

Changes in Quarantine Rules.—The secretary of the state department of health announced, October 1, several important changes in department regulations regarding communicable diseases. In cases of whooping cough, measles, German measles, chickenpox or mumps, children who have had the disease previously may attend school, and there is no restriction as to the movements of adults of the family. The quarantine period for whooping cough has been reduced to four weeks from the date of onset; after the third week, with the permission of the health authorities, the patient may be taken on the street in charge of a responsible person. The regular quarantine period for diphtheria is extended five days and for scarlet fever ten days, after the death or removal of the patient, unless the immunity of all other members of the household can be established. Lethargic (epidemic) encephalitis has been made reportable, and, if deemed advisable by the health department, will be made quarantinable. In typhoid and paratyphoid fevers there is no time limit to the quarantine, but physicians may not request the removal of the placard until the patient has had a normal temperature for a period of seven days. No case of communicable disease may be moved from one place to another without written consent of the health authorities concerned. Hookworm and certain other ailments have been stricken from the list of reportable and quarantinable diseases.

Philadelphia

Medical Congress at Sesquicentennial Planned.—A plan for national and international congresses of physicians and those practicing the allied sciences was adopted, October 12, by the committee on health and medicine of the Sesquicentennial Exhibition. The first society that accepted the invitation to be present in 1926 was the Pennsylvania State Medical Society.

Personal.—Dr. Ernest Laplace has been made a Commander of the Legion of Honor by President Millerand of France. ——Dr. Winnifred Alice Blampin, Philadelphia, has been appointed teaching fellow in pathology, and Dr. Walter G. Elmer, Philadelphia, has been appointed professor of orthopedic surgery, at the Woman's Medical College of Pennsylvania, Philadelphia.

TEXAS

Hospital News.—Dr. Charles H. Harris, Fort Worth, announces plans for the erection of a $250,000 sanatorium building. The present building will be used for a nurses' home.——The Overall Memorial Hospital, Coleman, for the erection of which $75,000 was donated by Mrs. M. Tye Overall, is completed and will soon be opened to the public. Dr. Luke P. Allison, Brownwood, has been appointed superintendent of the institution.——The new hospital building for the Mercedes Hospital, Mercedes, will be completed, Jan. 1, 1924.

Personal.—Dr. George F. Powell has been reappointed superintendent of the North Texas Hospital for the Insane, Terrell. This is Dr. Powell's thirtieth year in charge of the institution.——Dr. Charles W. Castner, Terrell, assistant physician in the North Texas Hospital for the Insane, has been appointed superintendent of the East Texas Asylum for the Insane, Rusk, to succeed Dr. William J. Johnson.——Dr. R. A. Wilson has been appointed acting city health officer of El Paso during the absence of Dr. John W. Brown, who will take an eight months' course in public health at Johns Hopkins University, Baltimore.——Dr. Marcel W. Sherwood, Temple, was elected state commander of the department of Texas of the American Legion at the recent convention at Galveston.——Dr. Charles E. Durham, Hico, has been appointed director of the bureau of venereal disease of the state department of health.

VIRGINIA

University News.—The one hundredth session of the University of Virginia was formally opened, September 27, with a record attendance in all departments. In the department of medicine there was an increase of twenty-three registrations over last year. Among the gifts to the university, announced by President Alderman, were a portrait of Dr. Richard Henry Whitehead, former dean of the department of medicine, which was given by members of the medical faculty and students; $10,000 from an anonymous donor for the establishment of the Richard Henry Whitehead scholarship in medicine, and $1,000 from Dr. Seale Harris, Birmingham, Ala., for a scholarship in memory of his father. Two second year medical class students, Benjamin M. Baker, Jr., and Eldridge H. Campbell, Jr., have won the Rhodes scholarship. They left, September 29, for Oxford University, England.

WISCONSIN

Smallpox in Milwaukee.—Following the report of eleven cases of smallpox among Milwaukee school children, vaccination by health department physicians was started, October 3.

Hospital News.—A $100,000 hospital for the insane will be erected at Verona, according to reports.——A new $25,000 hospital building will be erected at Ripon by the Ripon Hospital Association.

WYOMING

Personal.—Dr. Frederick Gassman, roentgenologist at the Virchow Hospital, Berlin, Germany, has located in Thermopolis, where he will be connected with the Hopewell Hospital.

Vaccination Enforced.—According to a ruling of the state board of health, no pupil shall be enrolled or attend any public, private or parochial school in the state of Wyoming, nor shall any teacher be employed therein, until he or she shall present to the person in charge of the institution, or his agent, a certificate signed by a physician licensed to practice medicine, showing that the pupil or teacher shows evidence of having been successfully vaccinated against smallpox.

CANADA

Personal.—Dr. Arthur L. Hughes, research professor of physics, Queen's University, Kingston, Canada, has been elected Wayman Crow professor of physics at Washington University Medical School, St. Louis, to succeed Prof. Arthur H. Compton, who goes to the University of Chicago.——Major General Sir David Bruce has been elected president of the British Association for the Advancement of Science for the Toronto meeting.——Dr. Maurice M. Seymour, deputy minister of public health for Saskatchewan, has been nominated by the dominion government to be the Canadian representative on the public health department of the League of Nations.——Dr. Charles K. Clarke, medical director of the Canadian National Committee for Mental Hygiene, delivered the Maudsley lecture on Psychiatry, recently, in London, England.——Sir Robert Falconer, president of the University of Toronto; Drs. Charles F. Martin and Edward W. Archibald, McGill University, Montreal, and Dr. Clarence L. Starr, Toronto, will give addresses at the annual session of the Tri-State District Medical Society, at Des Moines, Iowa, October 29-November 3.

GENERAL

American Electrotherapeutic Association.—At the annual meeting of the association in Atlantic City, N. J., September 18-21, Dr. Sinclair Tousey, New York, was elected president of the association; Dr. Richard Kovacs, New York, secretary, and Dr. John Willard Travell, New York, treasurer.

New Drug Regulation.—To prevent tampering with packages containing narcotic drugs, the Bureau of Internal Revenue, October 14, issued regulations requiring the stamps to be affixed so as to afford a seal for the package when sent through the mail. Strip stamps will be used for the tax, and they must be put on in such a way that they will be broken only when the package is opened.

Personal.—Prof. Nils Bohr, University of Copenhagen, winner of the Nobel Prize in Physics for 1922, will lecture at the Carnegie Institute of Technology, New York, in November.——Prof. Carl Voegtlin, Hygienic Laboratory of the U. S. Public Health Service, Washington, D. C., has returned from Europe where he attended a conference on biologic standardization of the health committee of the League of Nations.——Sir William De Courcy Wheeler, president of the Royal College of Surgeons, Dublin, Ireland, and Dr. Arthur E. Webb-Johnson, London, England, will address the annual session of the Tri-State District Medical Society, at Des Moines, Iowa, October 29-November 1.

International Health Board's Report.—Sections of the report of the International Health Board of the Rockefeller Foundation for 1922 show that during the year the board worked in cooperation with the governments of seventy states and countries throughout the world. The activities reported include a review of the history and objects of the International Health Board; the campaign against yellow fever in Mexico and South America; surveys, field experiments, and demonstrations in malaria control at home and abroad; world-wide efforts in the control of hookworm disease; the extension of county health work in the United States and Brazil; the development of public health laboratory services, public health nursing services, and schools of hygiene in various countries; cooperation with the health section of the League of Nations, and the extension of training through fellowships.

Tri-State District Medical Association Meeting.—The Interstate assembly of the Tri-State District Medical Association will be held at Des Moines, October 29-November 1. All the sessions of the general meetings and the clinics will be held in one building. Any physician who is in good standing in his state medical society may register at this session. Among those who have accepted places on the program are: Sir William DeCourcy Wheeler, Dublin, Ireland; Sir Robert A. Falconer, president, Toronto University; Drs. Edward W. Archibald, Montreal, and Clarence L. Starr, Toronto. The program for the session is in charge of Drs. Dean Lewis, Chicago, E. Starr Judd, Rochester, Minn., W. L. Bierring, Des Moines, and John L. Yates, Milwaukee. Representative clinicians from the leading schools of Chicago, New York, Rochester and the middle west will conduct symposiums on medical and surgical diagnosis.

Clinical Congress of Surgeons Meets.—The Clinical Congress of the American Surgeons will hold its thirteenth annual session in Chicago, October 22-26. The first day's session will include two hospital conferences and the presidential meeting at which the president-elect, Dr. A. J. Ochsner, Chicago, will be inaugurated. Dr. George W. Crile, Cleveland, will deliver the John B. Murphy oration in surgery. The remaining sessions of the conference will be devoted to clinics and demonstrations at the hospitals and medical schools and to evening scientific sessions. On October 23 elaborate ceremonies will mark the laying of the cornerstone of the Murphy Memorial. A special feature of the present session will be a series of clinical demonstrations in various hospitals in which internists, pathologists and other specialists will participate. In view of the limited capacity of the various clinics and hospital amphitheaters attendance is limited and clinic tickets are issued to all who attend.

Middle Western States Birth Control Conference.—A conference on the social and medical aspects of birth control will be held at the Drake Hotel, Chicago, October 29-31. At the opening meeting the principal speakers will be Horace J. Bridges and Mrs. Margaret Sanger. Among the speakers for the second day are Prof. E. A. Ross, Department of Sociology, University of Wisconsin; Prof. E. M. East, professor of biology, Harvard University, "Civilization at the Crossways," and Judge Harry Olson, Chicago, "Moral Decadence." At the afternoon session the speakers include H. H. Miller, professor of sociology, Oberlin College; O. N. Lovejoy, director of the National Child Welfare Council; Leon J. Cole, professor of genetics, University of Wisconsin, and Eleanor R. Wembridge of the Women's Protective League, Cleveland. On Tuesday evening at a special session for the medical profession, the scientific aspects of contraceptive methods will be discussed. The final session, October 31, includes addresses by C. C. Little, professor of biology, University of Maine, "Biological Phases of Birth Control"; Dr. S. A. Knopf, New York, "Infant and Maternal Welfare," and Dr. Raymond Spaeth of the Johns Hopkins University, Maryland, "Mental and Social Aspects of Birth Control." Physicians, sociologists and psychologists interested in the subject are invited to attend the sessions.

Bequests and Donations.—The following bequests and donations have recently been announced:

Putnam Memorial Hospital, Bennington, Vt., $150,000, and the Kurn Hattin Homes, Westminster, Vt., the Children's Aid Society of New York City, and the Home for the Friendless, Erie, Pa., each $10,000, under the will of Guy B. Johnson of the Standard Oil Company, on the death of the beneficiaries.

Boston Floating Hospital, the Baby Hygiene Association, Little Sisters of the Poor, Home of the Angel Guardian, Jamaica Plain, Boston Provident Association and St. Vincent's Orphan Asylum, each $25,000; Home for Jewish Children, Dorchester, Mass., Free Hospital for Women, Brookline, and the Salvation Army, each $20,000; Roxbury (Mass.) Home for Children and Aged Women, Mount Pleasant Home, Roxbury, St. Monica's Home, Roxbury, Burnett Home for Aged Women, and the New England Home for Women and Children, each $15,000; Children's Island Sanatorium, Inc., Boston, St. Mary's Infant Asylum, the Massachusetts General Hospital, the Home for Aged Colored Women, each $10,000, and the Boston Nursery for Blind Babies, $5,000, on the death of the annuitants, by the will of James G. Knowles of Boston.

Bellefontaine, Ohio, for the establishment of a home for aged maiden ladies, $40,000, by the will of Miss Mary Powell.

Rochester (N. H.) Hospital, $31,000, from the will of Mrs. John F. Sanders.

St. John's Riverside Hospital, Yonkers, N. Y., having raised $50,000 for a new building, gets the $25,000 pledged conditionally by Alexander Smith Cochran.

Jewish Consumptive Relief Association of California, $20,000, by the Cleveland Ladies' Auxiliary, for an addition to the tuberculosis sanatorium.

Newberry, S. C., $15,000, subscribed by citizens for the erection of a hospital in that city.

St. Luke's Hospital, New York, $10,000, and the Waterbury Hospital, Waterbury, Conn., $10,000, to found a bed in memory of his mother, by the will of William Edmund Curtis.

New Hampshire Hospital for Women and Children, Concord, $10,000, by the will of John C. Webster of Hartford.

Presbyterian Hospital, Philadelphia, $6,000, to endow a free bed in the Eliza Cathcart Home for incurables; $5,000 to endow a free bed, and $1,500 in trust, the income to be used for furnishing rooms, by the will of Catherine W. E. Snyder.

Children's Seashore Home, Atlantic City, N. J., $2,000, by the will of Mary Beatty.

Visiting Nurse Association of Chicago, $500, by Mrs. George R. Carr of Lake Forest, Ill.

Fostoria, Ohio, the site for a hospital, by Mr. and Mrs. Edward Bricker.

Protestant Children's Home, Chicago, 25 acres of land on which to erect a home for 1,000 destitute children, anonymous.

Annual Meeting of the American Public Health Association.—The American Public Health Association met, October 8-11, in Boston, with a registered attendance of more than 800. Coincidentally the U. S. Bureau of Education held a conference on school health supervision, and a health show was conducted on private initiative. The activities of the association were carried on in two general sessions and in meetings of the nine sections into which the association is divided. The principal speakers at the general sessions were Sir Thomas Oliver, Newcastle-on-Tyne, England, who discussed American activities in the fields of safety and sanitation in modern industries; Dr. George E. Vincent, president of the Rockefeller Foundation, who analyzed preventive medicine from a layman's standpoint, pointing out the essential relations between animal experimentation and human welfare, and urging the energetic support of the Society of Friends of Medical Progress, Inc., recently organized to offset the activities of the forces that combat animal experimentation, and Dr. Linsly R. Williams, managing director of the National Tuberculosis Association, who discussed the coordination of national health activities.

COMMITTEE ON MUNICIPAL HEALTH DEPARTMENT

An elaborate report was submitted by the committee on municipal health department practice, printed by the U. S. Public Health Service as Public Health Bulletin 136, showing the results of the inquiries conducted by the committee since 1920. Through the activity of this committee there has been created in the Public Health Service a division on administrative practice, under the immediate direction of Dr. Paul Preble, Assistant Surgeon-General, Washington, D. C. The activities of this division will be supplemented by those of a field director whom the committee is enabled to employ through a guarantee by the Metropolitan Life Insurance Company of $15,000 for carrying on the work during 1923 and 1924. Dr. Watson S. Rankin, state health commissioner of North Carolina, has been employed in this capacity, having obtained leave of absence from the state to enable him to serve. Dr. Rankin will visit cities within the United States that ask for his assistance, his activities and the results of his observations being coordinated and assimilated with those of the Public Health Service. The extension of this service to Canada, Cuba and Mexico is under consideration. A suggestion by the committee that medals be awarded to cities and towns for work accomplished in the public health field did not meet an altogether favorable response. It was pointed out that the award of a medal might lead a community to believe that its work was in a state so highly satisfactory that no improvement was needed; that the failure of a city to receive a medal might react unfavorably on the health officer who, after all, might be prevented from doing satisfactory work solely by handicaps imposed on him by local conditions; and that it might fairly be questioned as to whether a medal of this character should be awarded to the city, to the city council, or to the health agencies.

PUBLIC HEALTH ADMINISTRATION

In his address as chairman of the Section on Public Health Administration, Dr. John W. S. McCullough, chief officer of health of Ontario, Canada, urged the advantages derived from the employment of full-time health officers. They are now found very generally in the larger cities, but the health work of the smaller towns, villages and rural areas is carried on largely under the direction of part-time, practicing physicians. Insecurity in tenure of office and inadequacy of salary were pointed out as obstacles in the way of the employment of full-time officers. Financial aid by the state to its minor political subdivisions, to permit the employment of full-time health officers, was looked on as of questionable expediency, since the assured benefit to be derived from such aid was liable to be offset by a diminished local interest in health matters. In any event, the full-time health officer cannot be looked on as a panacea, but he can best serve as a nucleus around which the activities of the medical profession and of private health agents crystallize.

THE TEACHERS' PART IN HEALTH EDUCATION

Discussing the teachers' part in health education, Dr. John Sundwall, director of the department of hygiene and public health, University of Michigan, Ann Arbor, Mich., laid stress on a warning note previously sounded by Miss Maude A. Brown, director of health education, Child Health Demonstration, Fargo, N. D., who protested against a system that turns the mind over to the teacher, the body to the physician, and the soul to the clergyman. Dr. Sundwall advocated a new type of health supervision for schools, to coordinate and direct all physical welfare activities, and at the conference on school health supervision, held under the direction of the U. S. Bureau of Health Education, he reported that the University of Michigan was preparing to train men and women each of whom would be qualified to discharge the duties of the medical inspector, the health teacher, and the instructor in physical education. The relation of the public health nurse to the practicing physician, the physical examination of apparently healthy individuals, the coordination of the public health laws of the United States, nuisance prevention as a hindrance to the prevention of disease, medical treatment of narcotic addicts, and other matters of interest to the medical profession and to the public were discussed.

PERIODIC HEALTH EXAMINATIONS

The association adopted a resolution indorsing the periodic physical examination of apparently healthy persons, urging all citizens of the countries represented by the association to have such medical examinations made, and indorsing the campaign for health examinations now being conducted by the National Health Council.

ELECTION OF OFFICERS

The following officers were elected for the ensuing year: president, Dr. William H. Park, director, Bureau of Laboratories, New York City Health Department; first vice president, Dr. Francis X. Mahoney, commissioner, Boston City Health Department; second vice president, Dr. John W. S. McCullough, chief officer of health, Province of Ontario, Canada; third vice president, Dr. William H. Davis, chief, division of vital statistics, Bureau of the Census, Washington, D. C.; treasurer, Dr. Roger I. Lee, professor of hygiene, Medical School of Harvard University, Boston, and executive secretary, Dr. James A. Hayne, commissioner of health, South Carolina. The annual meeting in 1924 will be held in Detroit.

LATIN AMERICA

Personal.—Our Buenos Aires exchanges mention the arrival in Argentina of Dr. A. Lustig, professor of general pathology at Florence, and author of works on general pathology and infectious diseases in man and animals.——Dr. Sebastian Recasens, dean of the medical department of the University of Madrid, has also arrived in Argentina, where he is to deliver a series of lectures on "Gynecologic Radiotherapy"; "Physical Measures in Gynecologic Treatment"; "Genital and Peritoneal Tuberculosis," and "New Methods of Treatment." He is to lecture at three other cities besides Buenos Aires.——The *Semana Médica* adds that Dr. G. Weygandt, professor of psychiatry at the University of Hamburg, is also lecturing in Argentina. Besides his series at the medical faculty, he is giving lantern talks on "The Relations of Art to Medicine," "Pathologic Art," and "Modern Futurism."——The resignation of Prof. J. T. Cancio, of the chair of physiology at the University of Lima has been presented, as he wishes to take a long trip to other countries.——The *Reforma Médica* of Lima announces that the legislature has decreed the foundation of an institute of preventive medicine, to train officials for public health work, on the initiative of Dr. C. E. Paz Soldán, who presided. He urged, further, the creation of a ministry of public health, mentioning thirteen countries that have organized a ministry of health since 1918. Cuba has had a government department of the kind since it first became a republic.——The Rio de Janeiro exchanges mention the arrival of Dr. J. H. White of the Public Health Service of the United States, who has been commissioned to study the foci of yellow fever in northern Brazil.——Dr. Daniel M. Vélez has been decorated by the French government as an officer of public instruction. He is professor of ophthalmology in the University of Mexico, director of the *Anales de la Sociedad Mexicana de Oftalmología*, and president of the Franco-Mexican Medical Society.

FOREIGN

Memorial to Medical Author.—A drinking fountain has been erected in Frankfurt as a memorial to Dr. Heinrich Hofmann, author of *Struwwelpeter*, familiar to many generations of children, by members of the medical profession of that city.

Turkey Bars Alien Physicians.—According to a dispatch from the Associated Press, the government of Angora has ordered the closing of all foreign hospitals and Red Cross establishments in Constantinople, and has forbidden foreign physicians and dentists to practice.

Centenary Number of the Lancet.—The October 6 number of the *Lancet* is the centenary number. It has nearly four

times as many pages as the usual number and contains a pictorial review of the progress of the paper. There is also a large colored portrait from an unfinished sketch by Edwin Landseer, of Thomas Wakley, the founder.

Honorary Degrees Conferred.—At the recent meeting of the British Association for the Advancement of Science in Liverpool, England, the honorary degree of doctor of science was conferred by the University of Liverpool on Sir Ernest Rutherford, president; Dr. Ernest Howard Griffiths, treasurer; Prof. Neils Bohr, professor of physics, University of Copenhagen; Prof. G. N. Lewis, professor of chemistry, University of California; Prof. G. Elliott Smith, professor of anatomy, University of London; Dr. Johs. Schmidt, director of the Carlsberg Laboratory, Copenhagen, and Prof. J. C. McLennan, professor of physics, University of Toronto.

Public Health News.—During the week ending July 29, forty-seven cases of plague were reported in Egypt.——About 3,000 cases of smallpox were reported present at Pointe à Pitre, Guadeloupe, August 4.——Forty-six new cases of smallpox (alastrim) were reported in the island of Jamaica, August 4.——Nine cases of yellow fever have been reported from Bahia, Brazil, by the U. S. Public Health Service.——Information received by the public health service, August 13, shows the occurrence of a case of plague at Paris France.——During June, 441 deaths from plague were reported in the Island of Java in four weeks.——During July, twenty-three cases of plague, with twelve deaths, were reported in Peru.——Twenty-seven plague-infected rats were found on board the steamship *Warwickshire* at Liverpool, England, recently, it is announced. The vessel had left Rangoon seven weeks previously.——Several deaths from bubonic plague are reported to have occurred among the Spanish troops in the Melilla zone, on the north coast of Morocco.

Deaths in Other Countries

Lieut. Col. **de Vere Condon,** Indian Medical Service, in England, September 13, aged 49.——Capt. **Edward O'Malley,** surgeon, Royal Navy, retired, September 20.——Surg. Commander **William P. Hingston,** Royal Navy, was killed at Yokohama during the recent earthquake.——**Dr. Alec B. Marsh,** surgeon commander, Royal Navy, September 7, of tuberculosis, aged 46.——Dr. **Joaquin Nin Posadas** of Buenos Aires, urologist, and member of the editorial staff of the *Semana Médica.*——Dr. **A. Rogivue,** president of the regional medical society with headquarters at Lausanne, aged 71.——Dr. **Fidel Pagés,** a military surgeon of high rank in Spain, in charge of the official *Diario* published by the war department, killed in an automobile accident, aged 37.——Dr. **J. Alexander,** secretary of the Berlin-Brandenburg medical chamber, aged 59.——Dr. **A. de Fabritiis,** a leader in the organization of the profession in Italy, aged 51.

Government Services

Annual Meeting of Military Surgeons

The thirty-first annual meeting of the Association of Military Surgeons of the United States was held at Carlisle Barracks, Pa., October 4-6. More than 250 members and other officers of the United States Army, Navy, Public Health Service and National Guard attended. Only two papers were read, almost the entire time being given up to practical demonstrations.

The first meeting consisted of routine business and the announcement of the award of Wellcome prize medals for essays. A gold medal and $300 was awarded to Col. Edward B. Vedder, M. C., U. S. Army, for his essay on the subject of "Benefits Derived by Military Medical Science from Animal Experimentation." The second prize, which carries with it honorable mention and life membership in the association, went to Major Edward G. Huber, M. C., U. S. Army. The first prize for the silver medal and $200 went to Lieut.-Col. Henry H. Rutherford, M. C., U. S. Army, and the second prize, honorable mention and life membership in the association, was awarded to Major Glenn I. Jones, M. C., U. S. Army. The subject for the essay for the silver medal was: "The Training of the Medical Student for Service in Time of War."

An address of welcome was delivered by Lieut.-Col. Charles R. Reynolds, M. C., U. S. Army, commandant of the Medical Field Service School. He was followed by the president of the association, Col. Charles Lynch, M. C., U. S. Army. The foreign delegates to the meeting were: Col. Kenneth Cameron, of the Canadian Army Medical Corps; Colonel Visbecq, of the French army medical service and director of the technical section of the sanitary service of the ministry of war; Colonel Duguet, medical service, French army, and professor at the military medical school at Val-de-Grace; Lieut.-Col. John Allan Anderson, professor of hygiene at the Royal Army Medical College, London; Lieut. Comdr. Asazo Tanaka, medical corps, imperial Japanese navy; Major Carl Barre, medical corps, Swedish army, and Capt. Francesco Piccininni, medical corps, Italian army, and professor of bacteriology at the University of Naples.

Papers presented by the French delegates were illustrated with magnificent charts and diagrams prepared by the sanitary service of the ministry of war. At the close of the lectures, Colonels Duguet and Visbecq presented the charts and apparatus to the Medical Field Service School on behalf of the French government.

October 4, there was a demonstration of the new equipment for medical troops. Besides articles of individual equipment there was demonstrated the new veterinary ambulance, the proposed new medical department combat wagon, the old combat wagon, standard ambulance, the field kitchen and the new field hospital tent. At the inspection of the Medical Field Service School, the head of each department explained his work and equipment. At 5 p. m. there was a review by the commandant of the school, together with Surgeon-General Ireland, representatives of the army and navy nurse corps, the foreign delegates and the officers of the association. Immediately following, Brig.-Gen. John M. T. Finney, M. O. R. C., professor of surgery at Johns Hopkins University, unveiled a bronze tablet commemorating the services of the medical department personnel who lost their lives during the World War. General Finney's address was eloquent.

In the evening, Colonel Reynolds entertained the officers of the association, the Surgeon-General of the Army, Captain Bogert and Captain Carpenter of the medical corps of the Navy, the foreign delegates, Brigadier-General Finney, the former presidents of the association and other distinguished guests. Following the dinner there was a reception and dance in the post gymnasium.

October 5 was devoted to a demonstration of the lines of medical aid from the firing line back to and including the field hospital, which was in charge of Major Taylor E. Darby, M. C., U. S. Army, a graduate of the School of the Line as well as the Army Medical School. Officers in attendance were given a map of the locality and a statement of the general situation of the military problem on the day before. They went over the field following the lines of medical aid, inspecting the demonstration of first aid by medical department enlisted men, the battalion aid station, the ambulance head, the collecting station and so on back to the field hospital. Dinner was served in the field at the field kitchen. Late in the afternoon there was a demonstration arranged by the chemical warfare service which included rifle grenades containing white phosphorus. These grenades were used to put down smoke screens from a short distance and also for attacks on machine gun positions. Grenades filled with tear gas were demonstrated. There was a demonstration of smoke candles for screening purposes, and finally a mortar demonstration. The function of the medical department in caring for casualties resulting from chemical warfare was explained by Lieut.-Col. Harry L. Gilchrist, M. C., U. S. Army, and the demonstration was in charge of Lieutenant Sullivan.

The officers elected for the ensuing year are: president, Col. Gilbert E. Seaman, M. C., Wisconsin N. G.; first vice president, Surg-Gen. H. S. Cumming, U. S. Public Health Service; second vice president, Rear Admiral E. R. Stitt, Surgeon-General, U. S. Navy; third vice president, Major-Gen. M. W. Ireland, Surgeon-General, U. S. Army; secretary-treasurer, Major E. E. Hume, M. C., U. S. Army, and Col. J. R. Kean, M. C., U. S. Army.

The afternoon of the last day of the meeting was devoted to a visit to Gettysburg. The entire party went over the battlefield. Major Stayer explained the military situation, particularly the duties of the medical departments of the Union and Confederate armies.

Hospital Authorized

Pursuant to instructions of the Secretary of War, the organization of Evacuation Hospital No. 63 (St. Margaret's Hospital Unit, Kansas City, Kan.), organized reserves, has been authorized.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 1, 1923.

The Defense of London Against Smallpox

The outbreak of smallpox in London, following the Gloucester epidemic, has brought into prominence a question that has for several years caused much concern. Are we, because of the neglect of vaccination, in danger of epidemics such as occur from time to time in unvaccinated populations? The prospect of an epidemic in London, the largest aggregation of people on the globe (amounting to seven millions), is appalling, even if only cost is considered. A case of smallpox costs the community directly $1,000. To this must be added, in the case of an epidemic, the widespread interference with business. The total loss would be a serious addition to financial burdens, which already are as great as we can bear. Neglect of vaccination has increased so much that between the years 1908 and 1918 the percentage of vaccinations to births fell from 63.2 to 41.5, and in 1920, 60 per cent of the children born were not vaccinated. Against this are the facts that the personnel of the war (about seven millions) were revaccinated, and that on the European continent, from which we often derive the disease, vaccination reached its highest level during the war. But patients with smallpox continue to arrive in this country from all parts of the world. For the prevention of an epidemic we have now to rely on prompt diagnosis, isolation and the vaccination of "contacts." This method has been brought to a high state of efficiency in recent years, mainly by the work of two men, and so far has preserved us from an epidemic on a large scale. In London, particularly, the results are remarkable.

Thomas Francis Ricketts, who deserves to be remembered with Jenner, was, like him, a native of Gloucestershire. In 1892 he was appointed medical superintendent of the London Smallpox Hospital, where he remained until 1915 and made observations which have become classical. He showed that while smallpox seems to present many difficulties in diagnosis, yet it is the disease "in which a certain diagnosis can be arrived at in almost every case." His method is based on a study of the distribution of the eruption, demonstrating that it preponderates on surfaces normally or abnormally irritated. In 1904 the London County Council took the important step of appointing a disciple of Ricketts, Dr. W. McConnel Wanklyn, whose experience of the revision of smallpox diagnoses then ran to 10,000 cases, to be available for consultation in all cases of difficulty and to assist in controlling smallpox administration in London. The procedure is that the attending physician, when confronted with a doubtful case, calls in the local health officer, who in turn, if in doubt, calls in Dr. Wanklyn, whose opinion is final. Dr. Wanklyn was also the means of introducing a system of sending warning circulars to physicians so as to put them on their guard when smallpox is present or imminent. If a case proves to be smallpox, the house is at once sealed and the patient is removed to an isolation hospital, usually within two hours. Disinfection is performed, and the public vaccinator offers prompt vaccination or revaccination to all "contacts." Lists of these are prepared and circulated confidentially to the health officers of the districts concerned. The "contacts" are kept under daily observation; the earliest signs of illness are noted, and as soon as the rash of smallpox appears they are removed to an isolation hospital. Finally, as a writer, a lecturer on smallpox diagnosis and administration, Dr. Wanklyn stands alone. His results are probably the greatest success achieved in public health administration in this country. In the sixteen years previous to his appointment in 1904, the cases of smallpox in London amounted to 15,587. In the sixteen years following it they were only 282. In three war years, when men were returning to this country from all over the world, and from many places where smallpox is endemic, there were no deaths from the disease in London, and in one year there was not a single case.

The Dangers of Open Food Shops

The health officer for Holborn (a London borough), in his annual report for 1922, makes a plea for extended powers to deal with the exposure of food in open markets and shops. In these places, he says, the food exposed for sale is subject to contamination from dust, flies and other sources of impurity. Moreover, if the food is exposed for sale or stored near a roadway, it may be contaminated with the excreta of animals. To a less extent this danger is prevalent in open shops. These dangers particularly affect such articles as butter, margarin and cheese, which are not cooked or washed before consumption.

Expedition for the Study of Tropical Diseases in Samoa: The Extinction of Filariasis

A new expedition to the tropics for the study of disease is about to start for Samoa under the auspices of the London School of Tropical Medicine. Its main object is the study of filariasis, which affects 85 per cent. of the natives of the Pacific islands. The expedition will be under the direction of Dr. Buxton, a fellow of Trinity College, Cambridge, who is well known for his work in entomology, performed in Mesopotamia during the war, and later as entomologist for the Palestine government in Jerusalem. The expedition will be away for two years and will have its headquarters at Apia. It will work in cooperation with the New Zealand government, which is responsible for the administration of the Samoan group. It is thought that the susceptibility of the Polynesians to disease, especially to tuberculosis, and the decline of their numbers to the extent of threatened extinction, may be due to filariasis. Infection seems to be due to a *Stegomyia* mosquito which is apparently confined to the Pacific islands. An attempt will be made to eliminate the disease by exterminating the mosquito on lines similar to those that were adopted in Panama and other places. It is thought that the problem is comparatively simple, as the mosquito lives in and around coconut trees and is found in the empty coconut shells, which are stacked in the making of copra. It is proposed to take over a small island a mile or so in diameter, where every breeding place of the mosquito will be effectively dealt with. The native method of storing water is in artificially hollowed coconut trees. It is proposed to substitute, for these, properly constructed cisterns. Moreover, the mosquito does not seem able to exist where the dense undergrowth has been properly cut down. If airways or rides are cut through the dense jungle and the insect is exposed to the trade winds of the Pacific, it may be blown away. An object lesson of this kind can then be applied to the larger islands. Other parasitic diseases prevalent in Samoa, particularly ancylostomiasis, will also be studied. Finally, the effects of the tropical climate on Europeans will be investigated more minutely than has been done previously. The finer methods available since the recent development of biochemistry will be used. Thus, the effect of the sun's rays on the human skin will be investigated with the catathermometer. As an expert ornithologist and entomologist, Dr. Buxton also hopes to bring back a collection of birds and insects (many of which are becoming extinct) for the British Museum.

Plague-Infected Rats at Liverpool

Dr. Hope, health officer of Liverpool, reports that the city has had a narrow escape from being swept by plague brought

by rats on a ship from India. While a cargo was being discharged, the city rat-catching staff discovered dead plague-infected rats in a consignment of mattress fiber. Immediate action was taken by the port sanitary authorities. The native crew was isolated, the cargo cleared, and the ship fumigated. Sixty-four rats and two mice were found, dead or alive, half of them being infected with plague. The mattress fiber in which the infected rats had made their nests was disinfected with steam. The danger of rat infection by rats is shown by the fact that last year 70,000 rats were destroyed in Liverpool, 50,000 of these being found in ships or in the docks.

PARIS

(From Our Regular Correspondent)

Sept. 28, 1923.

Criminality Since the War

The anticipation that the World War would be followed by an increase in crime and delinquency has not been justified by statistics recently published by M. Louis Sadoul, counselor of the Court of Appeals at Nancy. These figures were collected from an area sufficiently large to avoid errors from local or chance causes. Comparative statistics for the years 1913 and 1921 are given for the four departments of France over which the Court of Appeals at Nancy has jurisdiction (Meurthe-et-Moselle, Meuse, Vosges and Ardennes). These four departments contain industrial and agricultural communities, and cities of large and of medium size, as well as isolated villages.

The population of the Nancy judicial district, which was 1,595,495 according to the census of 1911, had dropped to 1,372,684 in 1921, a decrease of 222,811, or about 14 per cent. Included is a sensible decrease in the number of standing troops in the East; numerous garrisons and large strongholds such as Toul and Verdun have been suppressed. Making allowances for these losses, the decrease in the civilian population, which is alone amenable to the civil courts, may be estimated at approximately 10 per cent. The number of misdemeanors has diminished considerably more than 10 per cent. Improbable as it may seem, therefore, the war appears to have brought about a decrease in crime.

In 1913, 15,088 persons were prosecuted before the eighteen correctional courts of this judicial district. In 1921, the number fell to 12,249, a decrease of 2,839, or from 18 to 19 per cent. Closer investigation reveals that the decrease is, in reality, even greater than appears at first sight. War legislation defined a number of new misdemeanors, notably the pursuit of what is termed "illegal speculation." While it is true that some of the newly added misdemeanors are disappearing, they nevertheless caused about 1,000 prosecutions in 1921; logically, for purposes of comparison, these should be deducted from the total. The decrease in the number of misdemeanors in 1921 as against 1913 would then be about 3,839, or approximately 25 per cent. Complete statistics for 1922 are not yet available, but the number of persons prosecuted during the year is known. From 15,088 in 1913 and 12,249 in 1921, the number has dropped still further to 9,933 in 1922.

MISDEMEANORS THAT ARE MORE FREQUENT

Only three kinds of prosecution for misdemeanor have increased at Nancy and in the rest of the district. These are of: (1) foreigners whose identification papers are not in proper shape; (2) owners of cabarets, which are better controlled than formerly, and (3) persons charged with adultery. As regards the last category, however, the increase is not great. In the whole judicial district, only fifty-four more persons were prosecuted for adultery than formerly (248 as against 194). In the arrondissement of Nancy the figures were fifty-six in 1921, as compared with forty, in 1913.

CRIMES AGAINST PROPERTY

In 1913, there were 3,424 prosecutions for theft, confidence games or fraud. In 1921, the number was 3,319, a slight decrease of 105. Indeed, if the decrease in population is taken into account, it must be concluded that there is a tendency for crimes of dishonesty to increase.

MENDICANCY AND VAGRANCY

Misdemeanors associated with mendicancy, vagrancy and pilfering in 1913 were 847; in 1921, 480, a decrease of 367, or more than 40 per cent. The decrease would be even more marked if it were not for the many charges of vagrancy brought against foreigners of all races and colors who throng the liberated regions. The French vagabond, familiar in the courts and jails before the war, has become almost a myth. Mendicancy also is almost a thing of the past. In 1921 there were only fifty prosecutions, as compared with 235 in 1913. In Nancy, especially, a marked decrease was noted, there having been only eleven prosecutions for mendicancy, as against seventy in 1913. One scarcely ever sees now that strange flotsam and jetsam of society with no home but the jail. They rarely committed a felony or serious misdemeanor; but they ran the whole gamut of trivial infractions of the law, and thus secured the opportunity to spend the cold winter months under "municipal shelter" with freedom to enjoy the beautiful summer days in the open. They made a study of the various jail wardens and well knew the relative advantages and disadvantages of the different jails and prisons; in the late fall, they would choose winter lodgings with confidence that they would have no cause for regret. This faithful clientele of the courts and prisons has been completely dispersed by the war. The causes for the change are doubtless to be found in the increase of wages and the ease with which work may be procured. Charity bureaus have noted the same facts, and report that the number of the really needy has diminished notably.

CRIMES OF VIOLENCE

It might naturally be supposed that attacks on the person would increase under the influence of habits of war. However, such has not been the case. Quite the contrary, of all crimes and misdemeanors, those against the person show the greatest decrease. In 1913, these were the most frequent, 3,548 prosecutions having been recorded. In 1921, the number of prosecutions dropped to 1,089, a decrease of 1,459, or more than 40 per cent.

JUVENILE DELINQUENCY

The education of children and adolescents was naturally much neglected during hostilities. The father was in the army, perhaps dead; the mother, left alone, was not strong enough; supervision was lacking; teachers were mobilized; demoralizing sights occurred every day, and tended to weaken the morale of the child. Nevertheless, the increase of juvenile delinquency was less than might have been expected. In 1912, in the judicial district of Nancy, 756 minors under 18 years of age were prosecuted; in 1921, there were 754 prosecutions; owing to the decrease in population, this really marks a slight increase. The complete figures for 1922 are not yet available, but it is known that the number of minors was only 515. The causes that increased juvenile delinquency seem thus to have disappeared.

The Bureau of Social Hygiene

M. Henri Sellier and M. Henri Rousselle, members of the general council of the department of the Seine, recently presented to this assembly a voluminous report from the public bureau of social hygiene, established in the department of the Seine for the prophylaxis of tuberculosis, especially pulmonary tuberculosis. Nov. 1, 1922, the number of persons registered and supervised by the dispensaries established by the bureau

was 21,425, which includes not only actual patients but also persons who cohabit with tuberculous persons. Of this number, 12,630 had been diagnosed as tuberculous. The number of registrants not yet attached to a dispensary but supervised by a provisional station, on this date, was 3,714, 1,601 of which were diagnosed as tuberculous. There was, therefore, a total of 25,139 persons registered by the antituberculosis organizations of the bureau, 14,231 of whom were diagnosed as tuberculous.

AMERICAN CONTRIBUTIONS

Owing to the liberal assistance in personnel and equipment of the Rockefeller Foundation, the bureau has established a central medical registration office which makes it possible to keep patients under medical supervision, and facilitates general control. Every tuberculous person is registered on an individual card, on which are recorded, with dates, all removals, changes of address, notes on the contagious character of the disease, variations in the condition of the patient as shown by repeated examinations, admission or readmission to hospitals, sanatoriums or preventoriums, and information in regard to discharge from these institutions. All this information is furnished by the physicians of the various organizations that care for tuberculous persons. Information in regard to the discharge of patients from institutions is given to the dispensaries interested. This central registration office of the department of the Seine has established connections with similar organizations in six other departments, and others will soon be added. Thus, gradually, the beginnings of national statistics on mortality and morbidity from tuberculosis are being established on new and sure bases.

Evidences of American collaboration are also to be found in other enterprises of the bureau. For instance, the creation of the Ecole de puériculture at the Faculté de médecine in Paris, which supervises public health developments among the mothers and children of Paris, is due, in large measure, to the American Red Cross.

EDUCATION OF THE PUBLIC ON HEALTH PROBLEMS

The influence of American initiative has been especially great in the education of the public. The methods employed in the propaganda department of the bureau were largely inspired by those introduced by the American antituberculosis mission. Propagation of public health doctrines by means of posters and pamphlets has been provided, thus far, to a great extent through the generosity of the Rockefeller Foundation, which presented to the bureau sufficient posters and pamphlets for wide distribution in the schools and among the general public. Also the American Red Cross Society contributed a large supply of pamphlets and illustrated cards. These gifts have made it possible to distribute 180,000 illustrated pamphlets, tracts and posters, 126,800 of which were distributed in the schools, 30,900 at public lectures, 8,800 in the dispensaries of the bureau, 6,700 at the public health exhibits, and 6,800 in institutions and to societies and individuals who asked for them. The bureau has found it necessary to pay for only 10,000 posters and placards, in compliance with demands from dispensaries and institutions. These included more particularly a poster indicating the address of the nearest dispensary of social hygiene for each section of Paris and the suburbs.

Death of Dr. Drouillard

Dr. Drouillard, formerly chief physician of the French Hospital at Jerusalem, died recently at Marseilles at the age of 51, as the result of disease contracted in the colonies and aggravated by the hardships of the war.

Health of Workers

The advisory committee on industrial hygiene, acting under the International Bureau of Labor, has been investigating practical methods of securing information on the hygiene and pathology of labor. The International Bureau of Labor has already published a series of bibliographic documents on industrial hygiene. The commission has drawn up a number of recommendations with regard to researches that should be made in various countries in order to make more general the adoption by industry of practical methods of prevention that are already known.

BUCHAREST

(From Our Regular Correspondent)

Sept. 22, 1923.

Increase of Mortality in Roumania

The deplorable condition of public sanitation in Roumania is evidenced by the request of Dr. Nicolau Papovici, physician to the county of Bihar, Transylvania, for help from the government; he stated that unless active and energetic measures are taken, mortality in the villages, already almost catastrophic among children, will rise terribly. The number of births is decreasing. In July, 49.87 per cent. and in August, 57.21 per cent. of the new-born children died. This enormous mortality is partly due to epidemic diseases, and partly to the great number of saloons, which is still increasing. In Vaskoh, a village with 800 inhabitants, there are seventeen brandy shops. Brandy is cheap, a liter (2 pints) selling for 35 or 40 lei, approximately 18 or 20 cents. In consequence, alcoholism is rampant, and the majority of babies are weakly and suffer from rickets. Papovici recommended that the administrative committee of the county should memorialize the government, requesting the refusal of licenses to sell brandy.

Medical Congress in Czernovitz

A congress of Roumanian physicians held in Czernowitz, the capital of Bukowina, was attended by more than 600 physicians from all parts of the country. The government was represented by the minister of public welfare and health, M. Marzescu, who opened the congress with the statement that the government has been and always will be ready to make monetary sacrifices in the interest of public health and welfare. The congress dealt with the question of improving the system of workmen's compensation in Bessarabia and the old kingdom of Roumania, where at present insurance is in a very primitive stage. M. Marzescu related that on his proposal a law has been drafted providing that all persons seeking relief at mineral springs, inside or outside the country, shall, without regard to their financial status, obtain a reduction of 75 per cent. in the railroad fare within Roumania. The necessity for taking the baths or staying at a climatic resort must be certified to by an official physician: in towns by the medical officer, in villages by the district physicians. Members of the workmen's insurance companies pay no fare when going to the baths for their health.

Dr. Stefanescu, chief medical officer of the province of Bessarabia, spoke about the great shortage of physicians. He said that in more than 100 districts the positions of district physicians are vacant. In Bukowina, out of forty districts these positions are filled in only eighteen. This is largely due to the small salary paid by the state. Energetic efforts will be made by the health officer of Bukowina and Bessarabia to secure salaries large enough to maintain a physician and his family. At present the cities are crowded with physicians, many of them living an indigent life rather than become district physicians. M. Marzescu stated that on his return to Bucharest his first task will be the solution of this important problem. He has learned that about four weeks ago a new disease developed in Bessarabia, which resembles malaria, but is caused by a hitherto unknown fly, and not by mosquitoes. The bite of this fly causes a febrile disease that lasts from four to six days and is accompanied by nasal bleeding and a petechial eruption on the legs, breast and abdomen. Because of the lack of physicians there have been about sixty

fatalities, all of which could have been prevented. In districts where physicians were available, not one patient succumbed. This lesson cannot fail to impress the government and will result in raising salaries sufficiently to attract younger physicians to settle in the country. Luckily the epidemic is over, and it is hoped that next year there will be no recurrence.

Antisemitism in the Universities

The idea of the "numerus clausus" or percentage quota, which caused such distress among the young people in Hungary, has spread to Roumania. But, whereas in Hungary the introduction of the percentage quota allows the admission of a certain number of Jewish students (about 10 per cent), in Roumania the antisemitic excesses that have been perpetrated since November of last year have not only involved the expulsion of Jewish students from the universities but resulted also in closing the universities for more than half a year, so that the students, without regard to creed, have lost one semester. The strongest feelings against Jewish students were encountered in the medical faculty. This started in the dissecting room of Cluj University. Cluj (late Kolozsvar, Clausenburg), is the capital of Transylvania, and its university was founded in 1876. Cluj has a population of about 100,000, and cannot afford to supply the anatomic department of the university with enough cadavers for dissection. This shortage has been increased because many Transylvanian students who formerly used to attend Budapest University were prevented from registering there by the introduction of the "numerus clausus," and non-Jewish medical students were kept back by difficulties in getting passports and visas, and also by the very important circumstance that the Roumanian government has issued an order that medical diplomas issued by Hungarian universities are not valid in Transylvania. The diplomas of Budapest University cannot be validated in Transylvania, although the language of almost all towns in Transylvania is still Magyar (Hungarian), and in the whole territory Hungarian laws relating to public health, forensic medicine and pharmacology are still in force. Cutting off Transylvanian students from the Hungarian universities has resulted in a great increase of registration at the Transylvanian university at Cluj. In other faculties the increase was not so marked because there is another university of law, theology and technology in Transylvania. As the number of first year medical students increased to more than 150, and the number of cadavers available in a season was from twenty to thirty, students have encountered difficulty in getting material for dissection. The number of Jewish students is about sixty, and Gentile students have claimed that Jews have no right to dissect Christian bodies. They have sent an ultimatum to their Jewish colleagues refusing to allow Jewish students to dissect other than Jewish bodies. However, as the ratio of Jews to other races in Cluj and its environs is 1:34, the number of Jewish corpses does not correspond with the ratio of Jewish to Gentile medical students. In addition, the Jewish community provides a fund for burying the bodies of friendless Jews. Under the laws in force in Transylvania, only unclaimed bodies can be utilized for dissection. No Jewish cadavers were sent to the dissecting rooms. When the Jewish communities of Transylvania learned of the antisemitic activities that began with the lack of Jewish cadavers, they offered to supply the unclaimed bodies of Jews for dissection. Jewish bodies were received occasionally, but this did not improve the situation because the foundation of the trouble was the antisemitic feeling, which was upheld by the demand for the "numerus clausus." The students demanded later that Jews be excluded from the lecture halls or they would themselves not attend the lectures. Under these conditions the minister of public instruction closed the medical faculty and later the whole university, not only in Cluj but also in Bucharest and Jassy. It was hoped that the loss of half a year would calm the antisemitic feelings and that at the opening of this semester the students would resume earnest work. This hope, however, has not been realized. In Cluj the students blockaded the entrance of the university against Jewish students. Next day the rector of the university placed a strong police and military patrol before the university building, whereupon the students made such disturbances in the neighboring streets that no Jewish student dared to go outdoors. The rector was obliged again to close the university. The students distributed leaflets by hundreds of thousands, admonishing Jewish students to refrain from attending the university lectures on pain of being whipped. This attitude was common to all the universities of Roumania. M. Angelescu, minister of public instruction, has resolved to try to open the universities, October 1, and to be personally in Cluj, the center of the excitement. In case the students continue their disorderly conduct, he will use the utmost rigor of the law. He has stated that he will personally attend the classes in anatomy and will allow nobody to interfere with the selection of corpses. If the Jewish communities will supply corpses, so much the better, he says, but he will not try to coerce them.

The worst of these unfortunate events is that hundreds of Jewish medical students prefer to leave the universities of their own country and to go to foreign universities, where they are exposed to poverty and hardship, rather than to be humiliated and even assaulted by their colleagues. Many have withdrawn altogether from the study of medicine, among them some who might have brought glory to their country had they been able to complete their studies and devote themselves to medical science.

BERLIN

(From Our Regular Correspondent)

Sept. 22, 1923.

Exchange for Surgical Films for Instruction Purposes

The surgeons of the universities of Berlin, Breslau and Frankfort-on-the-Main have agreed to make exchanges of surgical films. These films are prepared by the Roth method, which I described in a recent letter.

Women Employable in Disinfection Service

According to a recent decision, women may now be employed in the disinfection service. The regulation provides, however, that in the selection of candidates only those shall be employed who are strong enough to perform the rather arduous duties and manage the disinfecting apparatus. A training course covering fifteen days has been organized.

Regulations Regarding the Sale of Pharmaceutic Remedies

A recently passed federal ordinance contains the welcome provision that, if there are good grounds to suspect that illegitimate traffic in pharmaceutic drugs is being carried on in any place of business, the traffic may be prohibited and, if necessary, the place of business may be closed. This will, it is thought, prevent unreliable dealers from continuing illegal commerce in drugs under a new firm name or through other persons acting for them in the same location.

Birthday Celebrations

SEVENTIETH BIRTHDAY OF SCHULZ

In August, Hugo Schulz, who was for many years professor of pharmacology in the University of Greifswald, celebrated his seventieth birthday. In 1879, he became an instructor in the university, and in 1883 was appointed director of the pharmacologic institute. Schulz was long attacked because he displayed a leaning toward homeopathic principles and was even claimed by the homeopaths as their disciple. In recent years, since nonspecific protein therapy and the principle of changed reactivity of the organism have become generally recognized, opposition to his views has subsided.

His crusade against overvaluation of experimental pharmacology, in the prosecution of which he has at times gone so far as to reject all pharmacologic researches based on experiment, is not greeted with so much hostility as formerly. The Arndt-Schulz biologic "law" has also increased the number of his followers. Of his textbooks, I may mention: "Officinal Plants and Plant Preparations," "Studies on the Pharmacodynamics of Sulphur," and "Outlines of Practical Pharmacology." Two years ago, taking advantage of the old age pension law, he resigned his post and has again taken up his residence in his native city, Rostock.

EIGHTIETH BIRTHDAY OF HIRSCHBERG

September 18, Prof. Julius Hirschberg, the eminent ophthalmologist of the University of Berlin, celebrated his eightieth birthday. He is still remarkably vigorous both in mind and in body. Last year, he delivered an address lasting an hour, in memory of his great teacher Albrecht von Gräfe, without notes and in excellent language. Hirschberg's achievements in his special field are generally known, but special attention may be called to his fundamental researches on congenital and acquired syphilitic changes of the eyes; his scientific and social activities in the crusade against trachoma; his publications on intra-ocular parasites, more particularly, *Cysticercus cellulosae*, the first of which appeared in 1876. His name will be associated especially with the introduction of the electromagnet into ophthalmologic practice. Hirschberg is distinguished also for his linguistic attainments. He speaks probably more than half a dozen modern languages, including Arabic; he is also well versed in the classical languages, and published a special lexicon to the plays of Aristophanes and an edition of Aetius of Amida. His chief literary work is the "Geschichte der Augenheilkunde," which has won the admiration not only of physicians but also of historians and philologists. His "Wörterbuch der Augenheilkunde" and his treatise on the history of Arabian ophthalmologists are also well known. He has traveled much and has acquired a broad knowledge of mankind, which is evidenced by his books "Um die Erde" and "Hellasfahrten." The present economic distress prevented celebration of his eightieth anniversary as it would have been carried out in other days. But, in spite of present conditions, the occasion was celebrated by a small company of friends. He was made an honorary member of the Berlin Medical Association and of the Berlin Society for Internal Medicine, and received other similar distinctions.

SEVENTIETH BIRTHDAY OF FRAENKEL

September 28, the Hamburg pathologist Prof. Eugen Fraenkel will be 70 years of age. He has been active in medical circles in Hamburg since the seventies, serving first as an assistant in the ophthalmologic department of St. George's Hospital. In 1876 he was appointed provisional prosector in this hospital, and in 1879 was given the permanent post; but in 1889, after the large Eppendorf Hospital was completed, he accepted a position in that institution. When the University of Hamburg was founded, he was given the chair of general pathology and pathologic anatomy. He did not confine his activities to theoretical researches on the cadaver but, until a few years ago, enjoyed a rather extensive practice in the field of diseases of the upper air passages. His publications in the realm of pathology and anatomy deal with widely diverse topics. In 1912 he gave an excellent discussion on so-called pseudoleukemia at the convocation of pathologists in Strasbourg. In collaboration with Much, he furnished evidence for the close relationship between pseudoleukemia and tuberculosis. Fraenkel's studies in the field of bacteriology possess still greater importance, and deal with various infectious diseases. His demonstration of typhus from sections of the skin is well known and has been of value for the diagnosis of this disease.

Marriages

WILLIAM NORWOOD ROGERS, Trenton, N. J., to Miss Florence E. Clayton of Jamesburg, September 1.

AUGUSTUS BENJAMIN CHIDESTER, Dexter, N. Y., to Miss Carol Luie Bullock of Cato, October 4.

ORVILLE NEWTON MELAND, Warren, Minn., to Miss Mildred Langtry of Minneapolis, in September.

HARRY LEE PARKER, Rochester, Minn., to Miss Florence Mae Lampert of Madison, Wis., August 4.

PAUL E. JOUARD, Brooklyn, to DR. LOUISE E. STAUDERMANN of Mount Vernon, N. Y., recently.

MORTIMER HARRY WILLIAMS, Roanoke, Va., to Miss Frances Lee of Irvington, September 8.

PATTON K. PIERCE, Tuscaloosa, Ala., to Miss Helen Hammer of University, Va., July 25.

LLOYD CLIFFORD VANCE to Miss Faye Stewart, both of Ponca City, Okla., September 30.

BRAND A. LEOPARD, Minneapolis, to Miss Esther Meyer of Duluth, Minn., in August.

VICTOR CLOUGH RAMBO to Miss Louise S. Birch, both of Philadelphia, October 8.

CHARLES B. WADE, Roseburg, Ore., to Miss Hilda Bechtle of Portland, August 31.

Deaths

David Tod Gilliam, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1871; formerly emeritus professor of gynecology at the Ohio State University College of Medicine, Columbus, and gynecologist to St. Anthony's and St. Francis' hospitals; member of the Ohio State Medical Society, the Pan-American Medical Congress and the Ninth International Medical Congress; formerly vice president of the American Association of Obstetricians and Gynecologists and past president of the Franklin County Medical Society; Civil War veteran; author of "Pocket Book of Medicine," "Essentials of Pathology," "Practical Gynecology" and other works; aged 79; died, October 2, of cerebral hemorrhage. Dr. Gilliam originated the technic of operations for suspension of the uterus and cystocele and devised many surgical instruments.

John Alexander Williams ⊕ Greensboro, N. C.; University of Virginia Department of Medicine, Charlottesville, 1895; president of the North Carolina Hospital Association; past president of the Guilford County and Rockingham County medical societies; on the staff of St. Leo's Hospital; aged 52; died, September 23, in a sanatorium at Baltimore, of a self-inflicted wound in his leg.

Jacob Rosenbloom, Pittsburgh; Columbia University College of Physicians and Surgeons, New York, 1909; member of the Medical Society of the State of New York, the American Biochemical Society, the American Chemical Society, and the Society of Experimental Biology and Medicine; aged 39; died in September, at the Western Pennsylvania Hospital, of pneumonia.

William Henry Burke, Jr., Cambridge, Mass.; Medical School of Harvard University, Boston, 1899; member of the Massachusetts Medical Society; formerly on the staffs of the Lying-In, the City, and the Carney hospitals, Boston; for several years member of the school board; aged 56; died, September 23.

James Widgery Marshall, Leesburg, Va.; Medical Department of Columbian University, Washington, D. C., 1901; member of the Medical Society of Virginia and the Medical Society of the District of Columbia; aged 51; died, September 28, at Johns Hopkins Hospital, Baltimore, of paralysis.

William Radley Miller ⊕ Hartford, Conn.; Albany (N. Y.) Medical College, 1898; member of the New England Society of Psychiatry; served in the M. C., U. S. Army, with the rank of captain, during the World War; neurologist to the St. Francis Hospital; aged 50; died, August 20.

William Edgar Rowe ⊕ Grand Rapids, Mich.; University of Michigan Medical School, Ann Arbor, 1879; formerly county physician; on the staff of the Butterworth Hospital,

where he died, September 24, aged 66, following an operation for carcinoma of the intestines.

Kent Eugene Williams ✠ Rome, N. Y.; Syracuse (N. Y.) University College of Medicine, 1895; served in the M. C., U. S. Army, with the rank of captain, during the World War; on the staff of the Rome Hospital; aged 55; died, September 25, of heart disease.

Richard Oliver Phillips, Yonkers, N. Y.; New York Homeopathic Medical College, 1877; aged 75; for ten years on the staff of the Homeopathic Hospital, where he died, September 26, of acute dilatation of the heart and pneumonia, following an operation for gastric ulcer.

James Harrison Crawford, Martin, Ga.; University of Georgia Medical Department, Augusta, 1900; member of the Medical Association of Georgia, and the American Academy of Ophthalmology and Oto-Laryngology; aged 51; died, September 22, of appendicitis.

Edward Cornelius Conroy, Andover, Mass.; Baltimore (Md.) Medical College, 1897; member of the Massachusetts Medical Society; for twelve years member of the school board; aged 63; died recently, at Methuen, following an operation for gallstones.

Louie Picot Butler ✠ St. Louis; St. Louis Medical College, 1888; formerly assistant in surgery at the St. Louis University School of Medicine; on the staffs of St. Louis Maternity, and St. Luke's hospitals; aged 57; died, September 29, of heart disease.

Alonzo A. Ward, Marquette, Neb.; Northwestern Medical College, St. Joseph, Mo., 1882; member of the Nebraska State Medical Association; aged 65; was killed, September 28, when the automobile in which he was driving overturned.

William J. Donahue, Plainview, Ill.; Barnes Medical College, St. Louis, 1898; member of the Illinois State Medical Society; at one time member of the state legislature; aged 66; died, September 26, at St. James' Hospital, Pontiac.

Minna May Austen, Halifax, Nova Scotia; Dalhousie University Faculty of Medicine, Halifax, 1903; for ten years a medical missionary for the Methodist Church of Canada, in China; aged 42; died recently, following a long illness.

Philander B. Wright, Berkeley, Calif.; Eclectic Medical Institute, Cincinnati, 1868; Civil War veteran; formerly a practitioner in Michigan, and member of the school board, Grand Rapids; aged 82; died, September 21, of senility.

William J. Awty ✠ Fargo, N. D.; Trinity Medical College, Toronto, Ont., Canada, 1891; past president of the Clay County and the Becker County (Minn.) medical societies; aged 61; died in September, at Charleston, Ill.

William F. Hicks, Raymond, Ill.; Missouri Medical College, St. Louis, 1871; Chicago Medical College, 1880; formerly coroner and member of the board of education; aged 87; died, September 19, of senility.

John Edward Allport, Los Angeles; Baltimore (Md.) Medical College, 1897; member of the California Medical Association and the Ohio State Medical Association; aged 60; died September 20, of heart disease.

James Monroe Tibbits, West Fulton, N. Y.; New York University Medical College, 1881; Civil War veteran; formerly coroner and health officer; aged 82; died, September 6, of chronic nephritis.

John Luther Kelly, Hope, Ark.; University of Arkansas Medical Department, Little Rock, 1898; member of the Arkansas Medical Society; aged 55; died, September 22, following a long illness.

James F. Gard, Santa Ana, Calif.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1874; formerly a practitioner in Kansas and Missouri; aged 84; died in September, of senility.

Charles Stuart Menzies ✠ Portland, Ore.; Rush Medical College, Chicago, 1909; served in the M. C., U. S. Army, during the World War; aged 38; died, September 13, of chronic nephritis.

William C. Leaman, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1889; member of the Medical Society of the State of Pennsylvania; aged 65; died, September 22.

Walter B. Vaughan, Honey Grove, Texas; Kentucky School of Medicine, Louisville, 1891; member of the State Medical Association of Texas; died, September 24, of cerebral hemorrhage.

Frank Edwin Castle ✠ Waterbury, Conn.; Yale Medical School, New Haven, 1870; on the consulting staff of the Waterbury Hospital; aged 78; died, September 3, of chronic nephritis.

Albert J. Strain, London, Ohio; Miami Medical College, Cincinnati, 1873; member of the Ohio State Medical Association; aged 78; was found dead, September 24, of heart disease.

Thomas Francis Quinlan ✠ New York; Bellevue Hospital Medical College, New York, 1895; at one time member of the board of health; aged 60; died, September 26, of heart disease.

James M. Slaughter, Wildwood, N. J.; University of Maryland School of Medicine, Baltimore, 1855; also a druggist; aged 89; was found dead in bed, October 8, of heart disease.

Rebecca C. Wolfe Brannon, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1895; aged 63; died, September 29, in New York City, of heart disease.

Edmund Douglas Welch, Washington, D. C.; Georgetown University School of Medicine, Washington, 1920; aged 27; died, September 26, of myocarditis, following influenza.

John H. Crozier, Cedar Springs, Ga.; University of Georgia Medical Department, Augusta, 1876 member of the Medical Association of Georgia; aged 69; died, September 22.

Elijah S. Smith ✠ Urbana, Ill.; Chicago Homeopathic Medical College, 1896; Hahnemann Medical College and Hospital, Chicago, 1905; aged 67; died, September 24.

Sherman Ripperton, Wyndmere, N. D.; Keokuk (Iowa) Medical College, 1905; aged 57; died, September 17, at a hospital in Lidgerwood, of pernicious anemia.

Edwin D. Ward, Hillsboro, Texas; Chattanooga (Tenn.) Medical College, 1893; member of the State Medical Association of Texas; aged 53; died, July 27.

William F. Stokes, Norris City, Ill.; University of Tennessee College of Medicine, Memphis, 1882; aged 67; died, September 20, following a long illness.

George W. Clark ✠ Waterloo, N. Y.; Detroit (Mich.) College of Medicine and Surgery, 1893; aged 51; died, August 16, at Detroit, of mitral regurgitation.

J. S. Wilson, Ferris, Texas; Kentucky School of Medicine, Louisville, 1879; formerly county health officer; aged 76; died, September 23, of senility.

Hays A. Compton ✠ Bellingham, Wash.; University of Nashville (Tenn.) Medical Department, 1882; aged 59; died, September 19, of pleurisy.

Frank C. Hoffmeier, St. Joseph, Mo.; University of Maryland School of Medicine, Baltimore, 1867; aged 78; died, September 14, of senility.

John D. Irgens, Bergen, Norway (licensed, U. S. A., years of practice); formerly a practitioner in Sioux Falls, S. D.; aged 67; died recently.

C. G. Bradford, Reeds, Mo.; Missouri Eclectic Medical College, Kansas City, about 1880; aged 78; died, recently, of chronic nephritis.

Benjamin McClasky, Louisville, Ky.; University of Louisville Medical Department, 1880; aged 64; died, September 23, of heart disease.

William Lemuel Rogers, Houston, Texas; Kentucky School of Medicine, Louisville, 1883; aged 64; died, September 14, at a local hospital.

Charles C. Yeiser ✠ Colbert, Okla.; Medical College of Evansville, Ind., 1878; aged 69; died, September 17, of pernicious anemia.

James Franklin Baker, Denison, Texas; Physio-Medical College of Indiana, Indianapolis, 1896; aged 61; died, September 16.

D. C. Bennett, Fountain Inn, S. C.; Atlanta (Ga.) Medical College, 1861; aged 80; died recently, of chronic endocarditis.

Palmer H. Irish, Akeley, Minn.; University of Minnesota Medical School, Minneapolis, 1900; aged 46; died, August 24.

David Owens Taylor, Sandusky, Mich.; Miami Medical College, Cincinnati, 1875; aged 77; died, September 18.

F. E. Hamilton, Parsons, Kan. (years of practice); Civil War veteran; aged 89; died, September 25, of senility.

David John Williams, Richmond, Ky.; Tennessee Medical College, Knoxville, 1895; aged 48; died, September 25.

John H. Randle, Knoxville, Tenn. (years of practice); Civil War veteran; aged 81; died, August 4, of senility.

B. F. St. John, Stonefort, Ill. (licensed, Illinois, 1877); aged 88; died, September 27, of senility.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

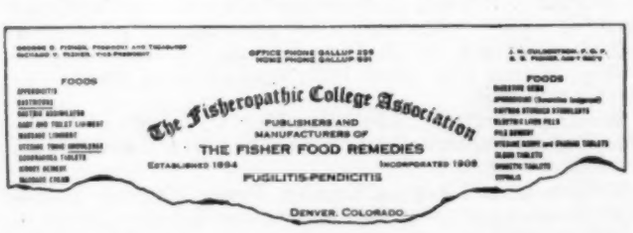
Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Fisher's Uterine Tonic and Fisher's Kidney Food.—A quantity of these two products were shipped in January, 1921, by the so-called Fisheropathic College Association of Denver, Colo. This is a crude piece of mail-order quackery operated by one George B. Fisher, a particularly blatant and persistent faker who has been in the courts more than once. In 1911 the papers reported that Fisher had been convicted of sending obscene matter through the mails, and that the federal judge, before whom the case was heard, had scathingly denounced Fisher for the filthy stuff he was distributing. The judge was quoted as saying from the bench that a man who was guilty of the practices of which Fisher had been convicted was of the lowest species of humanity, unfit to mingle with decent and respectable people. More than ten years ago the Propaganda department collected some of the advertising matter of Fisher's fakery. A letter was written to the concern purporting to come from a woman asking for particulars about a uterine tonic. A series of follow-up letters resulted. One of the series opens with the question:

"Did you take your Fisheropathic Nightcap before sleep last night? (motion 1). This is the motion that makes fat babies and new blood."

When the Bureau of Chemistry in the present case analyzed "Fisher's Uterine Tonic" they reported that it contained ammonia, traces of ammonium salts, including iodid and carbonate, vegetable extractives, glycerin and water. The federal authorities declared it misbranded because it was fraudulently represented as an effective cure for "lack of passion," absence of menstrual flow, blood poisoning, cancer of the uterus, gonorrhea, and various other conditions.

Analysis by the same chemists of "Fisher's Kidney Food" showed the stuff to contain a small quantity of vegetable extractives, citric acid, sugar, alcohol and water. This was



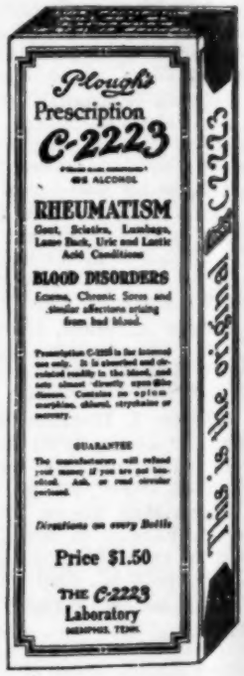
declared misbranded because the label declared the presence of only 6 per cent. alcohol when it contained more than 12 per cent. In January, 1923, the concern pleaded guilty and was fined $50.—[*Notice of Judgment No. 11402; issued Oct. 4, 1923.*]

San-Yak.—Edgar S. Burnham, Detroit, Mich., who did business under the name of Burnham Medical Co., shipped in December, 1918, a quantity of "Dr. Burnham's San-Yak" which was misbranded. When the preparation was analyzed by the federal chemists it was found to have essentially the following composition:

Alcohol	7.0 per cent.
Plant extracts, including cinchona and a laxative drug	2.4 per cent.
Water	92.0 per cent.

The preparation was falsely and fraudulently represented as an effective treatment, preventive, remedy and cure for Bright's disease, prostatic troubles of old men, rheumatism, tuberculosis, appendicitis, eczema, tired feelings, diseases of the nerves, hardening of the arteries and a dozen or more other conditions. In September, 1922, Edgar S. Burnham pleaded guilty and was fined $50.—[*Notice of Judgment No. 11421; issued Oct. 4, 1923.*]

Plough's Prescription C-2223.—The Plough Chemical Co. of Memphis, Tenn., shipped in December, 1922, and February, 1923, a quantity of "Plough's Prescription C-2223." This concern also puts out a line of nostrums that it calls the "Black and White Preparations." When the federal chemists analyzed "Plough's Prescription C-2223" they reported that the product consisted essentially of potassium iodid, extracts of plant drugs, including colchicum, a trace of salicylic acid, glycerin, alcohol and anise flavoring. Some of the claims made on the trade package for the product were:



"A Reliable Blood Purifier."

"A Treatment for Rheumatism. . . . Sciatica, Lumbago, Lame Back, Blood Disorders, Eczema, Chronic Sores and Similar Diseases Caused by Bad Blood."

"Men, women and even children, whose energy has been sapped and their life almost wrecked, who were troubled with festering sores or tortured with rheumatic pains, have been relieved from the grip of these diseases, after the continued use of our treatment with Prescription C-2223."

These and similar claims were declared false and fraudulent and in April, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11418; issued Oct. 4, 1923.*]

Chicawampa Tea.—The Chicawampa Tea Co. of Reno, Nevada, shipped in December, 1922, and January, 1923, a quantity of its product, which the federal authorities charged was misbranded. When analyzed by the Bureau of Chemistry, the product was found to consist essentially of cut herbs, principally the *Ephedra nevadensis* (which seems to be known locally as "Caynote" or "Canutilo") with small proportions of peppermint and sage. The label of the product contained the following claims:

"Chicawampa Tea is one of the most energetic blood purifiers, vital restoratives, especially for old people, and is recommended as a means of invigoration in exhaustive diseases, loss of blood or general debility. It is used for Bright's Disease, Diabetes and Rheumatism; Liver, Bladder and Kidney Troubles, Helps in the Elimination of Uric Acid from the blood and is recommended for all urinary troubles. A help in Female Troubles."

These claims were declared false and fraudulent and in April, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11419; issued Oct. 4, 1923.*]

Man-Made Malaria.—A surprisingly large proportion of the mosquito breeding in malarious districts can be prevented by the simple and obvious expedient of forestalling the creation of artificial breeding places. Dr. Henry R. Carter estimates that 60 per cent., and in some places as much as 75 per cent., of the malaria is due to man-made breeding places. Railroads have been offenders, mainly by leaving borrow pits and interfering with natural drainage. In many cases highway construction has involved the same practices. By the use of improper methods, agricultural drainage projects have often created much malaria. The impounding of water for power or other industrial purposes is a prolific source of man-made malaria. Improperly constructed street gutters, faulty methods of irrigation and gold dredging, leaky hydrants and water mains, artesian wells, overflowing cesspools, abandoned wells, fire protection water barrels, water troughs, all contribute to the easily preventable *Anopheles* breeding.—Report of International Health Board of the Rockefeller Foundation, 1922.

Correspondence

"DEPILATORY AND ANTISEBACEOUS ACTIONS OF BORIC ACID"

To the Editor:—In a recent communication by Dr. P. J. Hanzlik (THE JOURNAL, September 29, p. 1134), he quotes a statement made incidentally in my textbook of "Physiological Chemistry" in the course of a discussion on surface tension. The statement is to the effect that sufficient ingestion of boric acid so prevents the secretion of oil in the skin that a rod touched to the skin and then to water no longer lowers the surface tension of water, and I put in the further statement that this loss of oil was accompanied by a falling out of the hair which might be total. Dr. Hanzlik criticizes this statement. He says: "This reference to the depilatory and antisebaceous actions of boric acid is not, however, supported by evidence in the book, *and one searches in vain for evidence in the existing scientific and clinical literatures* [italics mine], and in current works on toxicology and therapeutics." After making this statement, he quotes some observations of Evans that two patients who had taken boric acid showed a temporary loss of hair. Evidently Dr. Hanzlik does not consider Evans' statement that the hair on the face and head fell out as supporting my statement. He then closes with the remark: "It should be emphasized, however, that uncritical statements concerning the actions and therapeutic possibilities of drugs, especially of the new and untried variety, must be particularly deprecated in textbooks devoted to the fundamental medical sciences." Of course, Dr. Hanzlik does not mean that boric acid is a new untried variety of drug, although his statement would seem to imply as much.

If Dr. Hanzlik had written me personally I should have been glad to send him a reference to the evidence for my statement, but he did not do so. It is not always easy to find the observations back of a statement in a textbook, but I am surprised that in such a well known and much worked on subject as the physiologic action of boric acid he should have had any difficulty, since the observations of the action of borax taken internally on the skin have been made by many observers.

The particular paper that I had in mind when I cited this illustration to bring attention to a practical use of surface tension phenomena in medicine was that of C. Féré entitled "Note sur l'action du borax administré par la voie gastrique sur les sécrétions cutanées" (*Compt. rend. Soc. de biol.* 5:987-989, 1893). In that paper Féré says, apropos of giving borax to epileptics in doses of from 2 to 20 gm. daily: "One of the cutaneous affections which most frequently occurs in the course of the boric treatment is a form of eczema which corresponds to the description of the eczema called seborrheic, but which takes very diverse aspects. . . . These eruptions are accompanied by a fine, dry desquamation of the skin of the scalp, the hair becoming brittle and falling out; it is not rare to see a generalized alopecia produced. The boric alopecia is not limited to the scalp, it extends to the hairs of the pubis and the axillae. *I have seen many sick completely dehaired* [italics mine]. The hairs on the pubis are not destroyed and grow out again like that on the head when one ceases the administration of borax, or even under the influence of intestinal antisepsis or by local treatment of the seborrheic eczema." And he goes on to point out the action on decreasing the secretion of sebum, just as I reported it in my textbook. He quotes also from the paper of Arnozan: "De la répartition des sécrétions grasses normales à la surface de la peau" (*Ann. de dermat. et de syph.*, 1892, p. 1) and from various other authors.

I trust that this reference will put Dr. Hanzlik on the track of the evidence he sought without success, and will remove from his mind the horrid suspicion that I conjured this alleged action of boric acid out of my inner consciousness.

ALBERT P. MATHEWS, PH.D., Cincinnati.

CONDITIONS IN THE INDIAN MEDICAL SERVICE

To the Editor:—I have read the communications of Mr. Hoffman and Dr. Darey on health matters relating to the government Indian Service in recent issues of THE JOURNAL which seem to indicate "open season" on this service. While I have no authority delegated by the latter to enter any controversial discussion of this subject, a rather long service as boarding school physician, agency physician, special physician in the field, and superintendent of both boarding school and agency has given me, I think, a thorough knowledge of Indian health conditions and the causes therefor, from which I beg to point out certain considerations that should not be excluded from the fair presentation of the subject.

Primarily, in medical and surgical practice, the physician is in a position analogous to that of the sportsman, who must catch his rabbit before he eats it. The physician must reckon with his patient's understanding to gain that control which is essential to successful administration. If the latter's intelligence is high, it is usually easy to order his therapy, his regimen, and his mode of living. In the utter lack of understanding and cooperation lies the stumbling block to the successful treatment and control of disease in the Indian population.

Obviously, congressional action, altruistic agitation, or greater efficiency in the professional effort that is now being expended cannot greatly change this phase of the problem. For example, if the agency physician makes a hurried drive out twenty miles in answer to urgent representations that an Indian is dying across the prairie, and finds, on arrival, that his patient has gone visiting, or he finds on each visit to his tuberculous patients that they persist in expectorating against the walls or on the floors despite most earnest protests on his part, nothing short of a missionary spirit will serve to keep up professional interest, which observers too often find wanting, and attach the blame to government agencies not responsible.

Indian education, as fostered by the government for the last forty or fifty years, has done much to render medical effort availing; but a primitive race cannot be lifted to the plane of civilized living in a few years, especially when this primitive population is scattered widely and thinly. Educated Indian women are excellent mothers, and usually their homes are sanitary. There are fewer little Indian graves than formerly, as a result of better sanitation in such homes.

It may be conceded, perhaps, that by the expenditure of millions of dollars, housing conditions might be made adequate to modern sanitary requirements; but unless there is an understanding of household sanitation on the part of the occupants, disease will still exist. This, of course, is no argument against good houses for Indians if money could be had to provide them; but the lack of funds is a better reason for housing conditions, as they exist, than official indifference. I do not believe that the Commissioner of Indian Affairs, or his subordinates, lack sympathy or are derelict in health matters relating to their wards.

To persons familiar with Indian legislation, it is well understood that Congress scowls at adequate appropriations for the needs of the Indian Service. Economy is the word most heard by administrators in this service. Free the Indian from government supervision entirely and let him survive or become

extinct is a slogan in the Indian country, emanating, of course, from motives of plunder, and the feeling that the Indian has cost the government too much looms much larger in congressional circles than the aspect of a dying race, if the race may be said to be dying. It may be stated here, in passing, that by miscegenation and education the race is not only holding its own, but is gaining a little.

There is no doubt that the Indian Office is doing much with its small appropriations for health work, and that it would do more if funds were available. There is also no doubt that larger appropriations should be made for this work.

That the pay of workers in the Indian Service should be increased admits of no argument. However, living expenses in the field are low, and the usual inducements to spend, such as confront the urban dweller, are absent. So are the inducements to professional effort, which constitute a great drawback to the desirability of this work for professional men who aspire to great skill and renown.

It is doubtless true that there are instances in which physicians in the Indian Service are handicapped by higher authority, lack of equipment, and other conditions making their positions untenable; but there are also instances of physicians seeking authority not required by their professional duties.

Not all the cases of snobbery and injustice are confined to the other side, and I doubt whether there is any perfect government service in which friction never arises. I think it may be taken as a truth that no medical man or woman who is not imbued with a broad altruism should enter this Indian health work; but those seeking a field for missionary effort will find in plenty such scourges as tuberculosis and trachoma widespread and arousing the pity of friends of the race. But it may be truly inferred that the Indian Service is no "pink tea" affair; that it is hard going at times, and that the reward is not munificent so far as pay or fame is concerned.

OTIS O. BENSON, M.D., Floodwood, Minn.

[NOTE.—The letter by Dr. Benson, and the one by Dr. J. H. Darey published last week, were referred in proof to Dr. Hubert Work, Secretary of the Interior, who replies:]

To the Editor:—I have read with interest the communications in proof form entitled "Conditions in the Indian Medical Service," by Dr. Otis O. Benson of Floodwood, Minn., and by Dr. J. Herbert Darey of Sioux City, Iowa, and am pleased that the physicians are directing thought toward the activity of the government's dealing with human welfare.

In staccato form, to insure brevity: There are approximately 340,000 Indians in the United States, an increase of 13,500 during the last ten years. Over 100,000 Indians have been removed entirely from the jurisdiction of the Interior Department, so far as their individual property rights may be concerned, but some of these Indians still retain an interest in undistributed tribal property.

The records of the Indian Office show that for the fiscal year ended June 30, 1923, there were approximately 19,073 Indians suffering from active and latent tuberculosis, and 27,745 suffering from trachoma, including conjunctivitis follicularis.

The appropriation for health work in the Indian Service in 1911 amounted to $40,000; the current appropriation act carries $370,000 for this work, and we are asking in our estimates for next year $470,000.

In 1888 we had four hospitals in the Indian Service. This number has been increased to seventy-eight at this time. Our total hospital capacity amounts to 2,222 beds. During the fiscal year there have been cared for in different hospitals approximately 16,000 patients, giving a total of about 486,000 hospital days.

In 1895 we had seventy-four physicians in the Indian Service; we now have 208. In 1895 we had eight nurses; we now have 105. In 1895 we had seven other health hospital employees; we now have 100. In 1895 we had three field matrons; we now have eighty-seven. We also have seven traveling dentists who travel from one jurisdiction to another in their respective districts and perform dental work for the pupils in the schools and also for the reservation Indians.

The Public Health Service has cooperated closely with the Indian Service, and in 1913 submitted a report to Congress on "Contagious and Infectious Diseases Among the Indians." A copy of that report is enclosed herewith. The conclusions and recommendations are found, beginning with page 80.

The Red Cross has detailed three of its nurses to our service, who have been working among the Indians during the last year, and have rendered valuable service.

The National Tuberculosis Association made a careful investigation of the health conditions among Indians recently, and its report is published in Senate Committee Print, Sixty-Seventh Congress, Fourth Session. Attention is invited to the recommendations of that committee found on page 44 of that report; also their comment found in the paragraph on page 44 reading as follows:

> Of adverse critics there are still very many, but in view of the real accomplishments of the Indian Service during the last decade, in the face of the most adverse circumstances, it cannot be claimed that there has been a lack of intelligent and efficient direction in the health movement among the Indians. The efforts of the bureau and its health service naturally find their limitation in the lack of adequate funds, and all fair-minded critics will probably concede that what has been accomplished marks a new epoch in Indian history, and is a most encouraging indication of a still more bountiful harvest in the future.

An interesting history of the development of the Indian Service health activities is found in Indian Office Bulletin No. 11, 1922. There is also a photographic copy of a table showing the vital statistics, housing and diseases during the fiscal year ended June 30, 1923. The general death rate among Indians has decreased from 23.24 per thousand in 1913 to 19.31 per thousand in 1923.

The Indian Medical Service has been greatly handicapped because of lack of funds and the inability to pay higher salaries. It is hoped that the Reclassification Act will enable our service to pay the same salaries to physicians that are paid in other services of the government. We need larger appropriations for health work. We hope eventually to get hospitals at practically every Indian school and agency. We also need a materially increased number of physicians, nurses and field matrons to handle health and sanitary work among the Indians.

From copies of reports you may learn that the Indians are scattered through twenty-four states; that our authority over different tribes varies, and that over many of them we have none at all.

Fundamentally, our first embarrassment in this service is lack of adequate funds to employ necessary personnel to accomplish what seems to us necessary. Theoretically, all superintendents of Indian agencies should be physicians. That would obviate conflicts in authority between lay superintendents and medical policies. That solution of the question is impossible for the principal reason that the physician who joins medical skill with organizing administrative ability is very rare. You will see, however, by the memoranda and charts submitted, that the Indian Bureau is making progress, and it is hoped that the open publicity on the Indian question that I am inviting may have its influence in Congress, which necessarily dictates the total amount to be expended and the actual positions and salaries to be attached under civil-service law.

HUBERT WORK, Washington, D. C.
Secretary of the Interior.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIFFERENCE BETWEEN TINCTURE OF IODIN AND COLORLESS IODIN

To the Editor:—Please state the therapeutic difference, if any, between the ordinary U. S. P. tincture of iodin and the colorless iodin. Is the latter as efficient locally and internally as the former? Please omit name. ———, M.D., Oklahoma.

ANSWER.—Tincture of iodin contains free iodin, whereas the so-called colorless iodin preparations do not contain iodin in the free state, but some form of combined iodin, chiefly iodid. For instance, Tinctura Iodi Decolorata, N. F., is a solution of sodium iodid and ammonium iodid obtained by mixing iodin and sodium thiosulphate, stronger ammonia water and alcohol.

When tincture of iodin is used externally, it is with the view of obtaining the therapeutic action of free iodin. Since the colorless iodin preparations do not contain free iodin, their external use as a substitute for tincture of iodin is irrational. When tincture of iodin is given internally, the free iodin contained in it is converted into iodid before absorption. Therefore, tincture of iodin and the so-called colorless iodin preparations given internally have essentially the same therapeutic effect. However, if a colorless iodin preparation is to be administered internally, it would be simpler and more rational to administer sodium iodid.

BEDBUG AS CAUSE OF DISEASE

To the Editor:—Please refer to literature that concerns the bedbug as a cause of disease. G. L. H. B., Boston.

ANSWER.—

Cornwall, J. W., and Menon, T. K.: Possibility of Transmission of Plague by Bedbugs, *Indian J. M. Res.* **5**: 137 (July) 1917.
Cumston, C. G.: Pathogenicity of Cimex Lectularius, *New York M. J.* **108**: 1082 (Dec. 21) 1918.
Friedman, G. A.: Possible Spread of Influenza Through Bedbugs, *M. Rec.* **95**: 14 (Jan. 4) 1919.
Relation of Bedbug to Public Health, Its Habits, Life History and Methods of Control, *Pub. Health Rep.* **35**: 2964 (Dec. 10) 1920.
Arkwright, J. A.; Atkin, E. E., and Bacot, A.: An Hereditary Rickettsia-Like Parasite of Bedbug, *Parasitology* **13**: 27 (March) 1921.
Francis, E., and Lake, G. C.: Transmission of Tularemia by Bedbug, *Pub. Health Rep.* **37**: 83 (Jan. 20) 1922.
Adie, H. A.: Development of Leishman-Donovan Parasite in Spleen Juice and in Alimentary Tract of Cimex Lectularius, *Indian J. M. Res.* **9**: 255 (Oct.) 1921.
Cornwall, J. W.: Note on Salivary Glands and Sucking Apparatus of Cimex Rotundatus, *Indian J. M. Res.* **10**: 687 (Jan.) 1923.

TREATMENT OF ROENTGEN-RAY BURN

To the Editor:—Please give duration and the most up-to-date treatment for a superficial roentgen-ray burn of the leg, through Queries and Minor Notes. Kindly omit name and address. M.D., Texas.

ANSWER.—The duration of a roentgen-ray burn is variable, and even a superficial burn may take several months to heal. Healing usually takes place most rapidly and the patient is rendered most comfortable by the use of wet dressings, such as calamine lotion, 0.5 per cent. aluminum subacetate solution, lead and opium wash, etc. Ointments should not be used if there is any discharge, but pastes, such as Lassar's paste made without salicylic acid, are often serviceable. The surface should be kept clean.

BENCE-JONES BODIES

To the Editor:—Please let me know the significance of Bence-Jones bodies, in what diseases they are found, and how to detect them.
A. P. BUTT, M.D., Elkins, W. Va.

ANSWER.—The Bence-Jones body, or protein, is probably a true albumin. Its exact chemical nature has not been determined, and little is known regarding its direct origin. It is excreted in cases associated with multiple myelomas of the bones, especially when they affect the thoracic skeleton. It has been observed in a few cases of leukemia and in a case associated with metastatic carcinoma. However, its presence in the urine may be regarded as practically pathognomonic of multiple myelomas, but a negative finding in the urine does not necessarily preclude this condition.

The specific reaction for the Bence-Jones body, says Webster, is observed on heating the acidified urine very slowly. At from 50 to 60 C. a slight cloud changing to a marked turbidity, then into a dense cloud is observed; when the boiling point is reached, the precipitate entirely or partially dissolves, especially if boiling is continued from one to three minutes. If the tubes are allowed to stand after boiling, the precipitate returns as the fluid cools. None of the other protein bodies give this sequence of precipitation, dissolving and reprecipitation. The literature, according to Webster, contains only about thirty-five cases showing the excretion of this body.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, November 13-14. Sec., Dr. J. W. Walker, Fayetteville.

CONNECTICUT: Hartford, November 13-14. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, November 13-14. Sec. Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport.

MAINE: Portland, November 13-14. Sec., Dr. Adam P. Leighton, Jr., 192 State Street, Portland.

NEBRASKA: Lincoln, November 6-8. Supt., J. D. Case, Lincoln.

NEVADA: Carson City, November 5. Sec., Dr. Simeon L. Lee, Carson City.

SOUTH CAROLINA: Columbia, November 2. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TEXAS: Dallas, November 20-22. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.

WEST VIRGINIA: Charleston, October 23. Sec., Dr. W. T. Henshaw, Frankenberger Bldg., Charleston.

Maine July Examination

Dr. Adam P. Leighton, Jr., secretary, of the Maine Board of Registration of Medicine, reports the written examination held at Augusta, July 10-11, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Sixteen candidates were examined, all of whom passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Boston University		(1923)	84.2
Harvard Medical College	(1884) 79, (1920, 2) 83.5, 87, (1921, 2) 85.6, 89, (1922) 84, (1923, 3) 82, 85, 87.2		
Tufts College Medical School		(1921)	88
Jefferson Medical College of Philadelphia		(1923)	83.4
Laval University Faculty of Medicine		(1923)	79
McGill University		(1920) 80, (1923, 2) 83.5, 86	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Baltimore Medical College		(1903)	Maryland
University of Vermont		(1921)	Vermont

Utah July Examination

Mr. J. T. Hammond, director of the Utah Department of Registration, reports the written examination held at Salt Lake City, July 5-7, 1923. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado		(1923)	82.3
George Washington University		(1923)	76.6
Northwestern University Medical School		(1923, 2)	76.5, 81.8*
Rush Medical College		(1922)	86.1
Harvard Medical College		(1923, 2)	78.7, 80.8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado		(1901)	Wyoming
Northwestern University Medical School		(1922), (1923)	Illinois
Rush Medical College		(1921), (1923)	Illinois
Hospital College of Medicine, Louisville		(1888)	Texas

* This candidate has finished his medical course, and will receive his M.D. degree on completion of a year's internship in a hospital.

Book Notices

THE DOCTOR LOOKS AT LITERATURE. Psychological Studies of Life and Letters. By Joseph Collins. Cloth. Price, $3, net. Pp. 317, with 12 illustrations. New York: George H. Doran Company, 1923.

During the last few years, literary magazines have been publishing a new type of literary sketch, and readers have been given a new point of view for the consideration of the work of many interesting and important writers. Several years ago, Albert Mordell wrote on the "Erotic Motive in Literature," and analyzed the novels of the period from the standpoint of the amateur psychanalyst; in Germany, Birnbaum, in a book called "Psychopathologic Documents," traced the illnesses of authors in their works; but apparently this volume by Dr. Joseph Collins is the first attempt to analyze the underlying motives of great writers, both from their works and from their biographies, that is worthy of quite serious attention. In his first chapter Dr. Collins shows that the fiction of today is marked by psychologic observation, not only intuitive psychology but the actual application of the psychologic method. He then proceeds to an analysis of some of the important writers of the period. He has not, however, included one American, so that the book is essentially a volume for the litterateur rather than for the average reader. The works of James Joyce, Marcel Proust, Amiel, Duhamel and even of Dr. D. H. Lawrence are not those that appeal to the multitude. Still less is this the case as regards Katherine Mansfield, Stella Benson or Dorothy Richardson. The outstanding sketch in the book is that relating to the Russian novelist, Feodor Dostoievsky, who was, as Dr. Collins rightly asserts, the great master in the depiction of psychopathic types. Dr. Collins' book has given great concern to the professional literary critics. Many of them have been confused at his manner of approach, and not a few have betrayed an unconscious resentment at the intrusion of the scientist into the field of literary criticism. This is the inevitable reaction of the standardized type of mind. The book marks Dr. Collins as a scholar, as well as a psychologist and psychiatrist, and he is to be congratulated not only on the literary style of his work but also on its timeliness and transcendent interest.

MANUEL DE NEUROLOGIE OCULAIRE. Par F. de Lapersonne, Professeur de Clinique ophtalmologique et A. Cantonnet, Ophtalmologiste de l'Hôpital Cochin. Second edition. Paper. Price, 20 francs, net. Pp. 416, with 113 illustrations. Paris: Masson et Cie, 1923.

A second edition of this model manual is most welcome. We call it a model manual because it is clear, concise and so well arranged that one gets oriented at a glance. The subject matter is treated from any point of view desired: anatomy; lesions and their symptoms; symptoms with underlying lesions and diseases in which they occur; diseases of all kinds with review of their ocular symptoms, etc. In other words, the cross index arrangement is perfect, and both ophthalmologists and neurologists may quickly inform themselves regarding matters wherein their subjects touch.

THE OPERATIVE TREATMENT OF GLAUCOMA. By H. Herbert, F.R.C.S., Consulting Surgeon to the Nottingham and Midland Eye Infirmary. Cloth. Price, $3 net. Pp. 152, with 31 illustrations. New York: William Wood & Co., 1923.

The number of operations done for glaucoma indicates the dissatisfaction of ophthalmic surgeons with the present methods of dealing surgically with increased intra-ocular tension of whatever type. Herbert here advocates the "iris inclusion operation" after twenty years' experience with this procedure. He is convinced that a successful iridectomy is in nearly all cases an example of subconjunctival drainage. From 1895 to 1900 he practiced the classical iridectomy with disheartening results. Since 1900 he has resorted to subconjunctival iris encleisis in a wound of moderate size, and feels that this type of operation holds out the greatest hope for the future, and that the danger of late infection and fistulization can be eliminated. The author uses either the broad keratome or the Graefe knife to make his incision, after having slid the conjunctiva toward the limbus. Iris forceps are passed down into the chamber quite close to one end of the sclerocorneal wound, and a small hold of the iris is taken midway between its base and the pupillary margin. The iris is drawn well through the angle of the wound; to be nipped there and released. The same thing is done at the other end of the wound. Then either a transverse or a vertical excision of the central portion of the iris is done. The author does not suture the conjunctiva over the wound. The book is divided into a preliminary chapter and chapters on general principles, practical application, technic, after-treatment and complications. It is largely a collection of papers already published, but revised and well connected. Details are not lacking where essential. There is much reference to the author's experience in India, where treatment must be immediate and permanent, and one must always keep in mind that the patients pass away from observation as do patients from out of the way places anywhere.

ERKRANKUNGEN DES RECTUM UND SIGMOIDEUM: PATHOLOGIE, DIAGNOSTIK, VERLAUF, UND KLINISCHE THERAPIE. Von Dr. H. Strauss, a. o. Professor an der Universität. Paper. Pp. 208, with 88 illustrations. Berlin: Urban & Schwarzenberg, 1922.

In a fairly concise and clear manner, Dr. Strauss discusses the various affections of the rectum and sigmoid. He points out, quite advisedly, that the statistics of frequency of these disturbances vary with the type of the practice of the physicians consulted. The internist sees fewer organic diseases of these parts than the gynecologist or the surgeon. The author lays stress on three important methods of examination: proctoscopy, digital examination and roentgenoscopy. In the description of mucous colitis, to which considerable space is devoted, he does not lay much stress, as do some of the other German gastro-enterologists, on the rôle of cathartics as an etiologic factor. He, like Van Noorden, favors an anticonstipation diet. While no space is devoted to surgical measures, for which the reader is referred to the proper sources, the author favors the injection method of treatment of hemorrhoids in selected cases. Appendicostomy, rather than ileostomy, is the method of choice in ulcerative colitis, on account of the lowered mortality rate. A full discussion of medical management of the various affections is given in detail. There are many illustrations. The legends are satisfying, and the subject matter is well handled. The author quotes freely from American and European writers. There is an extensive bibliography.

SÉMIOLOGIE OCULAIRE. La Calotte Cornéo-Sclérale. Anatomie—Physiologie—Pathologie. Par Félix Terrien, Professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, 25 francs, net. Pp. 260, with 144 illustrations. Paris: Masson et Cie, 1923.

This book deals with the subject matter in a manner too complex for the student and general practitioner and too sketchy for the ophthalmologist. The author considers the bulbar conjunctiva, the cornea, the sclera, the anterior chamber angle and the iris as a separate division of the eye, and treats of these tissues alone. The anatomy, physiology and diseases of these parts are dealt with in a rather haphazard manner, without the system and order that one expects to find in a textbook. The etiology of disease affecting the corneoscleral calotte is handled fragmentarily, so that that phase of the book is of but little use to either the ophthalmologist or the general practitioner. The printing is good, but the binding is characteristically European in that it falls to pieces before the book is half perused.

A TEXT-BOOK OF THERAPEUTICS INCLUDING THE ESSENTIALS OF PHARMACOLOGY AND MATERIA MEDICA. By A. A. Stevens, A.M., M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Sixth edition. Cloth. Price, $6.25 net. Pp. 793. Philadelphia: W. B. Saunders Company, 1923.

This well established textbook consists of two parts: one dealing with the remedies, and the other with the treatment, of various diseases. The first five hundred pages are devoted to a study of drugs, which are classified in accordance with their therapeutic uses and are given excellent practical discussion. Numerous additions have brought the book well up to date; and one notes, with pleasure, the acceptance of modern nomenclature—such as that used by the Council on Pharmacy and Chemistry—and of simplified spelling, e. g., elimination of the useless final "e" in the names of alkaloids and of salts, such as morphin and bromid. An attempt to

discuss remedial measures other than drugs in about thirty-six pages is naturally unsuccessful, as an adequate presentation of this subject would require much more space. Especially lacking is practical detail. Study of general dietotherapy is missing. The portion dealing briefly with some of the more important diseases is, on the whole, satisfactory; but hardly necessary, as the student obtains the same kind of information from his textbooks on the practice of medicine. It is this duplication of work that has led to the abandonment of special courses in therapeutics in many medical colleges, when instruction on general therapeutic management is greatly needed by our medical students. . . .

Medicolegal

Physical Versus Mental Suffering

(McCracken v. Swift & Co. (Mo.), 250 S. W. R. 953)

The Springfield (Mo.) Court of Appeals, in affirming a judgment in favor of the plaintiff, says that this action was based on the allegation that unwholesome and foul odors were generated by the defendant at a poultry, egg and butter house maintained by it, which odors permeated the atmosphere in the vicinity of the plaintiff's property; that the crying of fowls and the handling of large numbers of milk cans created loud and unusual noises that disturbed the inmates of the plaintiff's houses; that the accumulation of filth by the defendant bred flies in large quantities, which swarmed around and got into the plaintiff's houses; and that the filth, odors, loud and unusual noises, and flies caused great suffering and discomfort to the plaintiff in the use and enjoyment of his home. The defendant suggested that the suffering shown was mental suffering, and that damages cannot be recovered for mental anguish alone when the injury is not accompanied by malice, insult or inhumanity. The stated legal proposition with regard to damages not being recoverable for mental anguish alone announces the rule adopted in this case. For physical suffering to warrant a recovery of damages, it must result directly from the tort or wrongful act. The court has found no case, however, which undertakes to formulate any rule by which a court or jury may be able, in all cases, to determine whether the suffering is, in a legal sense, mental or physical.

In a general way, the court may say that mental suffering affects the mind alone and physical suffering affects the body, but in applying that general formula to specific cases, the line of distinction between the two classes of suffering is not always clear. Fright, grief and sorrow are classified as mental suffering. This is clearly right, because the effect centers in the mind and is subject to the control of the mind. In one sense, all suffering is mental, because the consciousness of it rests in the mind. If an arm is paralyzed, a blow on it will not cause suffering of any kind, because the nerves fail to carry the sense of suffering to the brain; but if the arm is normal, the sense of suffering is felt and is located at the place at which the blow was struck, and we then say that the blow caused pain in the arm, not in the mind, and in that case no action of the mind can stop the pain. That suffering is, in a legal sense, clearly physical.

In the opinion of the court, the suffering caused by foul stenches, loud and unusual noises, and the pest of large numbers of flies, is just as real as that caused by a blow, and the sufferer is as clearly unable, by any mental action of his own, to relieve against it. It cannot be dispelled by the will power of the individual affected, and hence suffering caused by these agencies should be denominated physical rather than mental, and their consideration as an element of damage is not barred by the rule that, in the absence of malice, insult or inhumanity, recovery cannot be based on mental anguish or suffering alone. Furthermore, the court thinks that the real damages suffered by the plaintiff were what were suffered by himself and family in the use and occupation of his home on account of the nuisance of which complaint was made, and that that suffering—and not the diminution of the rental value of his property—should be made the basis on which to estimate the damages suffered.

Diagnosis and Treatment—Evidence and Instructions

(People v. Saunders (Calif.), 215 Pacif. R. 120)

The District Court of Appeal of California, Second District, Division 2, in affirming a judgment of conviction of the defendant of practicing a system and mode of treating the sick and afflicted without a license, says that it is an erroneous view that one does not practice medicine or treat the sick unless, as a preliminary to ministering to the necessities of his patient, he makes a diagnosis. The medical practice act of California, which the defendant was convicted of violating, provides that "any person who shall practice . . . any system or mode of treating the sick or afflicted in this state, or who shall diagnose, treat, operate for, or prescribe for, any disease, injury, deformity," etc., without having a license, shall be guilty of a misdemeanor. It is at once apparent from this language that the legislature intended to denounce the act of any one who, not having a license, might diagnose without treating or prescribing, or who might treat or prescribe without diagnosing. Not only so, but the enactment is based on reason and logic. Physicians are often called as consultants in cases in which diagnosis has already been made by others. They doubtless often prescribe for cases in which they never see the patient and on the diagnosis of others. Suppose a physician in Pasadena should write or telephone to a physician in Los Angeles, stating that he has under his care a patient who is afflicted with a certain disease, that he has prescribed certain remedies without avail, and asking the Los Angeles physician whether he can suggest a remedy. If the latter should thereupon write a prescription and send it to the Pasadena physician, could it possibly be said that he would not be practicing medicine in doing so? The answer to the question is manifest. The court concludes that a physician may treat or prescribe for a patient, within the meaning of the statute, without making diagnosis of his case.

The jury was instructed that it was not to be affected in its deliberations by any evidence to the effect that the defendant's practice of his system had succeeded with his patients. The instruction was entirely proper. There was some evidence in the record tending to show that his treatment of his patients had produced favorable results. It was not only proper, but necessary, to instruct the jury that this evidence must be given no weight in determining whether the defendant had practiced without a license. Otherwise, the jury might have lost sight of the real question in the case. Nor was it error to instruct the jury that it was not necessary for the people to prove that the defendant had no license to practice his system of healing, but that the burden was on him to prove that he had such a license.

Two other instructions given to the jury were:

> That a person is sick and afflicted who is suffering from a misplaced vertebra, and that any one who engages in the business or occupation of adjusting or replacing, or who in the pursuit of an occupation attempts to adjust or replace, such misplaced vertebra into its normal position, is practicing a system and mode of treating the sick and afflicted.
>
> That one who is suffering at all with nervousness, headaches, pains or any other malmental or malphysical condition whatever is sick and afflicted within the meaning of section No. 17 of the state medical practice act, and that any one who engages in the business or occupation of manipulating the bones or kneading the muscles or tissues of such person for the purpose of relieving or healing such person of any such condition is practicing a system and mode of treating the sick and afflicted.

If, for the sake of argument, it be conceded—what the court by no means decides—that these two instructions should be regarded as relating to matters of fact and not to matters of law, the giving of them was harmless. There can be no possible dissent from the proposition that one laboring under the disabilities named in the instructions is sick and afflicted, or that he who attempts to relieve such a one from his disabilities by means mentioned in the instructions is practicing a system and mode of treating the sick and afflicted.

It was not improper, even if it was not strictly necessary, to instruct the jury that "the word 'wilfully,' when applied to the intent with which an act is done or omitted, implies simply a purpose or willingness to commit the act, or make the omission referred to. It does not require any intent to violate law, or to injure another, or to acquire any advantage."

Society Proceedings

COMING MEETINGS

American College of Surgeons, Chicago, Oct. 22-26. Dr. Franklin H. Martin, 40 E. Erie Street, Chicago, Secretary.
Radiological Society of North America, Rochester, Minn., Dec. 3-7. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Southern Medical Association, Washington, D. C., Nov. 12-15. Mr. C. P. Loranz, Empire Building, Birmingham, Ala., Secretary.
Southern Surgical Association, White Sulphur Springs, W. Va., Dec. 11-13. Dr. H. A. Royster, 423 Fayetteville Street, Raleigh, N. C.
Tri-State District Medical Society, Des Moines, Iowa, Oct. 29-Nov. 1. Dr. William B. Peck, 82 Stephenson Street, Freeport, Ill., Managing Director.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Terre Haute, Sept. 26-28, 1923

The President, DR. CHARLES H. GOOD, Huntington, in the Chair

Insulin in Diabetes

DRS. J. A. MACDONALD and C. L. RUDESILL, Indianapolis: The remarkable effects of insulin in diabetes should not divert us from the primary importance of a well balanced diet. Proper dietetic management of a patient with diabetes can be attained in most cases through investigation and training possible only in a well equipped institution.

General Management of Diabetes Mellitus

DR. B. M. EDLAVITCH, Fort Wayne: A properly balanced diet, low in protein and carbohydrate and high in fat, must be supplied to meet the requirements of each case, and a study of the blood sugar is essential. Mild diabetes may be controlled by dietary measures only. In severe cases diet should be supplemented by insulin when diet alone fails to control the disease.

Insulin in Surgery

DR. MILES F. PORTER, Fort Wayne: The use of insulin will render feasible operations of selection on patients with diabetes which before we had this agent were considered impracticable. In insulin also the surgeon has a remedy of promise in the prevention and cure of infections, and it is quite within the bounds of reason to hope that the morbidity and mortality that heretofore obtained in nondiabetic patients with low carbohydrate tolerance, goiter patients for instance, may be reduced. Obstetrics also offers a promising field for the use of insulin. Like all potent remedies, insulin is dangerous and should never be given save by one thoroughly familiar with it, and it should be remembered that the danger from insulin is greater in the nondiabetic than in the diabetic patient.

Experimental Studies of Kidney Regeneration

DR. ERNEST RUPEL, Indianapolis: A kidney which by injury has suffered partial loss of function should not be removed, provided there is no complicating infection, stone, obstruction or the like, to hinder future activity. But a kidney that has irreparably lost its function (small, atrophied kidney excepted) should be removed. The blood supply to the kidney is entirely dependent on the renal artery, even though the capsule has been removed and the organ is covered with adhesions. Ligation of the ureter produces hydronephrosis, but the kidney undergoes repair after the release of pressure together with the gradual elimination of the other organ. One half of one kidney will supply the body needs, if the burden is gradually forced on it.

Importance of Anomalies in the Diagnosis and Treatment of Diseases of the Urinary Organs

DRS. H. G. HAMER and H. O. MERTZ, Indianapolis: Congenital anomalies of the kidney may be classified as anomalies of form and volume, number, and position. The more marked anomalies of form and volume may influence diagnosis and surgery, because (1) such a kidney is more vulnerable to bacterial invasion; (2) there may be faulty rotation of the organ, and (3) there is frequent association of variations from the normal in the arrangement of the blood supply. Of the anomalies of number, a supernumerary kidney must be exceptional; the congenital absence of one kidney is more frequent and has a diagnostic and surgical problem peculiarly its own. The single kidney may be diseased as is the normal kidney, but nephrectomy would result in death. Anomalies of position may consist in misplaced kidneys separate and distinct, and two kidneys misplaced but united. The surgical significance depends on the abnormal relation to other viscera and the alterations in the arrangement of its blood supply, when two kidneys are present, and on a proper understanding that such a misplaced kidney may be the only one. The most important anomaly of the ureter is the variation in number. In the double kidney with ureteral doubling heminephrectomy is now receiving considerable attention by urologic surgeons. The different degrees of proximity of the two ureters is the anatomic fact that renders heminephrectomy difficult in many cases. According to Braasch, heminephrectomy is limited to a few favorable cases.

Secondary Anemia

DR. CLYDE L. CUMMER, Cleveland, Ohio: The study of a case of anemia requires primarily a carefully taken history, including a consideration of the patient's occupation and a complete physical examination with particular reference to probable foci of infection and attention to be possibility of hemorrhoids and undue uterine bleeding. Oftentimes, exhaustive laboratory and roentgenologic examinations are required. An obvious prerequisite to excluding pernicious anemia is a count of the red and white blood cells, the estimation of hemoglobin, and the study of stained films. As part of the latter, search should be made for blood parasites, stippled red blood cells and nucleated red blood cells. A blood Wassermann test should be a part of the routine. The stools should be examined for occult blood, parasites and parasitic ova. The stomach contents obtained after a test meal may yield data of value in indicating the presence of gastric ulcer or malignancy. If definite information is not secured by other means, the teeth and nasal sinuses should be submitted to roentgen-ray examination, and if other lines of investigation prove fruitless the gastro-intestinal tract should be investigated by the same means.

Diphtheria Control

DR. L. POTTER HARSHMAN, Fort Wayne: Administration of antitoxin at the earliest possible moment not only will save life, but also will ward off complications and minimize the dosage necessary. Intubation as an operation needs more attention. Release from quarantine should be granted only after three or more negative cultures carefully taken, at consecutive twenty-four hours intervals, from both nose and throat. Toxin-antitoxin is efficient in causing an active immunity. The Schick test provides an easy means of determining susceptibility. Within six months after the administration of toxin-antitoxin the Schick test should be made again and the positive reactors given another series of injections.

Arthritis of the Spine

DR. GRACE LINE HOMMAN, Laporte: Infectious arthritis of the spine is of not infrequent occurrence, but it is not always easy to differentiate a pyogenic from a tuberculous lesion. A careful history and thorough examination are of the utmost importance. All foci of infection should be removed, and a roentgenogram of the spine should be made in all cases of sciatica, repeated attacks of lumbago, and more or less persistent backache. Early diagnosis and treatment not only may mean an economic saving to the individual by preventing a long illness and loss of earning power, but also may prevent much suffering and permanent disability.

Frequency of Thymic Hyperplasia in Toxic and Nontoxic Goiters

DR. ALFRED S. GIORDANO, South Bend: The thymus is invariably hyperplastic in toxic goiters and not in nontoxic goiters. Thymic hyperplasia is the result rather than the cause of the toxic goiters in the majority of cases, as shown by the curative effects of partial thyroidectomy, especially in toxic adenoma. Age is not an important factor in the frequency or degree of hyperplasia of the thymus gland. It has not been proved that the fatal cases of toxic goiters are due to the associated hyperplastic thymus, but it may be an important contributory factor to the cause of death.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

26: 195-289 (Sept.) 1923

*Kidney Function in Acute Disease. H. B. Wilcox and J. D. Lyttle, New York.—p. 195.
Reflexes of the New-Born. F. De Angelis, Naples, Italy.—p. 211.
Exophthalmic Goiter in Childhood with Some Unusual Manifestations. H. Heiman, New York.—p. 216.
*Experimental Observations on Etiology of Chorea. E. C. Rosenow, Rochester, Minn.—p. 223.
*Birth Hemorrhage into Spinal Cord with Resultant Bladder and Kidney Complications. Report of Case. C. O. Kohlbry, Duluth, Minn.—p. 242.
Fatal Case of Thrush Involving Skin, Lungs and Nails. J. T. Christison, St. Paul.—p. 250.
Physiology of Exercise in Children. Part 2. Study of Collapse in Normal Children. M. Seham and G. Egerer-Seham, Minneapolis.—p. 254.
*Calcium and Phosphorus Determinations in Blood Plasma in Rickets and Tetany. J. H. Hess, J. K. Calvin, C. C. Wang and A. Felcher, Chicago.—p. 271.
*Shadowgraph Method of Recording Outlines of Hands. G. N. Hoeffel, Boston.—p. 280.
Rickets in Relation to Inorganic Phosphate and Calcium in Maternal and Fetal Blood. A. F. Hess and M. J. Matzner, New York.—p. 285.

Kidney Function in Acute Disease.—In a series of 217 acute infections (including twelve postoperative noninfections), retention of nitrogenous waste products was found by Wilcox and Lyttle in about one half of the cases. This retention is thought to be due to simple impairment or depression of kidney function, though in some groups of cases the possibility of nephritis could not be ruled out. Of the three nitrogenous waste products studied, total nonprotein nitrogen, uric acid and creatinin, the uric acid was above normal in a greater number of cases than were total nonprotein nitrogen and creatinin. This selective retention is shown especially well in the group of twenty-six miscellaneous infections, seventy cases of pneumonia and sixteen cases of tonsillitis. The type and degree of retention in these groups suggest early but definite acute nephritis. It is clear from the evidence that in many cases of acute infection there is definite impairment of kidney function which may not be evident clinically. Certain of these cases may go on to actual nephritis. Emphasis is laid on the necessity for more careful consideration of the kidney in all acute infections and its routine protection from all unnecessary strain.

Chorea Caused by Streptococcus.—The theory is advanced by Rosenow that chorea is due to a streptococcus having peculiar neurotropic, immunologic and other properties.

Birth Hemorrhage into Spinal Cord.—In a case of hemorrhage into the cervical cord at birth, reported by Kohlberg, the child was born by breech extraction, some difficulty being encountered with the aftercoming head. There were no evidences of hemorrhage elsewhere. The hemorrhage was evidently below the level of origin of the phrenic nerves as the diaphragm functioned normally. The child showed the typical picture of cervical cord injury. The position of the arms was characteristic. The breathing was entirely diaphragmatic, there being paralysis of the thoracic and abdominal muscles. The legs were paralyzed. As a result of bladder paralysis with back pressure, the child developed double hydro-ureters and hydronephrosis. Infection of bladder and kidneys resulted. Necropsy revealed a complete degeneration of the cord in the lower cervical region.

Calcium and Phosphorus in Blood Plasma in Rickets and Tetany.—The evidence presented by Hess et al. is as follows: In moderate rickets, the phosphorus or calcium, or both, may be moderately lowered. In severe rickets, the phosphorus is markedly reduced, even in children exclusively breast fed, while the calcium may or may not be lowered. In approximately 40 per cent. of the cases of tetany studied severe rickets was present. In rickets complicated by tetany, the calcium is considerably reduced. The phosphorus may or may not be reduced. Under treatment, in the severe cases of rickets complicated by tetany, the phosphorus content at first shows a tendency to decrease or to remain stationary. These studies demonstrate that there is a more or less definite blood picture in rickets and in rickets associated with tetany, but the authors feel that these represent two phases of the same disorder rather than two distinct types, and that the blood picture may be affected by extraneous factors and may vary according to the activity or healing of the process.

Shadowgraph Records of Hands.—Hoeffel uses a sensitized printing paper to make a permanent record of the shape and size of the hands of children. The method is simple, speedy and inexpensive.

American Journal of Hygiene, Baltimore

3: 1-127 (July) 1923

Control of Hookworm Disease. XXIV. Hookworm Cultures with Humus, Sand, Loam and Clay. N. R. Stoll, Baltimore.—p. 1.
Id. XXV. Use of Egg Counting Method in an Intensive Campaign. R. B. Hill, Baltimore.—p. 37.
Id. XXVI. Epidemiologic Study of Small Village on North Coastal Plain of Porto Rico. W. W. Cort, W. A. Riley, G. C. Payne and R. B. Hill, Baltimore.—p. 61.
Id. XXVII. Study of an Area in Mountains of Porto Rico, Which Had Been Influenced for Twenty Years by Hookworm Control Measures. W. W. Cort, W. A. Riley and G. C. Payne, Baltimore.—p. 73.
Id. XXVIII. Study of Heavily Infested Group of People on Sugar and Coffee Estate in Porto Rico, Before and After Treatment. W. W. Cort, G. C. Payne and W. A. Riley, Baltimore.—p. 85.
*Id. XXIX. Relation of Coffee Cultivation to Spread of Hookworm Disease. W. W. Cort, W. A. Riley and G. C. Payne, Baltimore.—p. 111.

Relation of Coffee Cultivation to Hookworm Disease.—In order to study the relation of coffee cultivation to the spread of hookworm disease, two areas were studied by Cort, Riley and Payne on coffee estates in the mountains near Utuado, Porto Rico. Evidence is brought forward that the present degree of human infestation showed a considerable reduction over former conditions, due to the effect of treatment and sanitation. The heavy infestation of coffee workers indicated that work in the coffee was an important source of infestation. Soil infestation was widespread in polluted areas near houses without latrines. A comparison of the degree of human infestation and soil infestation, at those places where definite centers of soil pollution were found, emphasizes the favorableness of the coffee environment for the development of hookworm larvae. Evidence of the importance of the washing by the rains in disseminating hookworm eggs and larvae was gained from these areas. A consideration of the habits of the workers during the coffee picking season shows conditions very favorable for the spread of hookworm disease. The cultivation of coffee seems to be such an important factor in the spread of hookworm disease in the mountains of Porto Rico that in the development of control measures special attention should be paid to the coffee workers and their environment.

American Journal of Public Health, Detroit

13: 723-805 (Sept.) 1923

Report of Committee on Venereal Diseases of State and Provincial Health Authorities. M. J. White, Washington, D. C.—p. 723.
Team-Play for Better Dispensary Service. Associated Out-Patient Clinics of New York. M. M. Davis, Jr., New York.—p. 738.
Status of Rabies in United States in 1921. T. F. Sellers, Atlanta, Ga.—p. 742.
Influence on Morphology and Staining of B. Diphtheriae by Growth in Mixed Cultures with Staphylococci and Streptococci. W. D. Stovall, E. Scheid and M. S. Nichols, Madison, Wis.—p. 748.
Report of Committee of State and Provincial Health Authorities on Relation of Medical Men and Health Officials. W. S. Rankin, Raleigh, N. C.—p. 753.
Child Health Work in Pennsylvania. M. R. Noble, Harrisburg, Pa.—p. 756.

American Journal of Roentgenology and Radium Therapy, New York

10: 593-680 (Aug.) 1923

Roentgen-Ray Study of Nonsyphilitic Periosteal Bone Lesions. R. G. Giles, Boston.—p. 593.
*Intestinal Rate and Form of Feces. F. L. Burnett, Boston.—p. 599.
Bucky Diaphragm with Wide Slits. W. L. Snider, Hot Springs, Ark.—p. 604.
Mesenteric Cyst; Patent Omphalomesenteric Duct: Duodenojejunal Diverticulum. C. H. Park, Pasadena, Calif.—p. 605.
Localization of Brain Tumors by Cerebral Pneumography. W. Dandy, Baltimore.—p. 610.

Dermatitis Artefacta Simulating Roentgen-Ray Dermatitis. G. M. Mackee and G. C. Andrews, New York.—p. 617.
Influence of Roentgen-Ray Therapy on Benign and Malignant Growths Dependent on Apparent Valid Distinction Between Them. G. Schwarz, Vienna, Austria.—p. 622.
Recent Developments in Protective Methods and Appliances as Used in Radium Therapy. C. F. Burnam and C. E. Ward, Baltimore.—p. 625.
*Resistance of Thyroid to Action of Radium Rays. Experimental Implantation of Radium Needles in Thyroid of Dogs. J. O. Bower and J. H. Clark, Philadelphia.—p. 632.
Radium Applicator for Small Lesions. N. T. Beers, New York.—p. 643.
Automatic Operation of Potter Grid. P. C. Hodges, Peking, China.—p. 645.
Simplified Roentgenographic Technic Based on Experimental Evidence. F. Liberson, New York.—p. 647.
Results of Skin Tests Made to Determine Objective Dose for Radium Radiations. A. L. Dean, Jr., New York.—p. 654.

Intestinal Rate and Form of Feces.—From the investigation made by Burnett of the intestinal rate, it is evident that there is a definite relation between the time taken by the ailment to pass through the gastro-intestinal tract and the form of the feces. Stools having an initial rate of fourteen hours and a final rate of sixty-two hours are soft and formless; those with a rate of twenty-five and ninety-seven hours, respectively, are formed with marks, and those at about sixty-two and 134 hours, respectively, are entirely composed of units. Accelerated and retarded rates are associated with stools of distinctive features. Again, these rates and features of the feces evidently bear some relation; and as one entirely composed of units is similar to the normal form of the higher animals; as it conforms to the physiology of the intestine; as the requirements necessary to produce it are exacting and when not fulfilled it changes to a soft and formless mass; and finally; as certain patients, changed by a course of treatment from dejecting a soft and formless stool to one composed entirely of units, become relieved of some very resistant forms of disease, it is difficult not to say that the unit form of the feces is normal. Accordingly the form of the feces affords a means of determining two heretofore unrecognized conditions of the body; one is intestinal indigestion with soft and formless stools; the other is an improved state of well being with fecal units and an intestinal rate of about sixty-two and 134 hours, respectively, always accompanying this form.

Resistance of Thyroid to Action of Radium.—Bower and Clark noted that the primary changes induced by radium in the thyroid are hemorrhage and necrosis. Organization and healing are evident in the third week and complete at about the twelfth week. The normal thyroid is distinctly resistant to the action of radium; it is not a good tissue for the study of the finer histologic changes produced by radium; the nuclear degenerative changes, characteristic of radiated malignant tissue, were never seen. No toxic symptoms of any sort were observed. No changes were demonstrable in the parathyroids. The apparent resistance of the thyroid tissue to radiation would make it appear that implantation would be superior to surface applications, and that relatively large dosage must be employed to assure any extensive effect on the gland.

American Review of Tuberculosis, Baltimore

7: 375-487 (Aug.) 1923

*Treatment of Severe Diabetes, Complicated by Severe Tuberculosis, with Insulin. W. D. Sansum, Santa Barbara, Calif.—p. 375.
*Case of Diabetes Complicating Chronic Pulmonary Tuberculosis Treated with Insulin. A. L. Hart and Erchal Creel, Albuquerque, N. M.—p. 386.
*Some of More Fundamental Reactions of Body Cells in Tuberculosis. F. M. Pottenger, Monrovia, Calif.—p. 389.
*Standardization of Tuberculin. P. A. Lewis and J. D. Aronson, Philadelphia.—p. 404.
*Immunologic Studies in Tuberculosis. S. A. Petroff, Trudeau, N. Y.—p. 412.

Insulin in Diabetes Complicated by Tuberculosis.—Sansum describes the results obtained in three extremely severe cases of tuberculosis complicated by extremely severe degrees of diabetes mellitus, showing that by the use of insulin the nutritional problem can be cared for adequately regardless of how grave the diabetes may be. Sansum believes that by the use of insulin a patient will have the same chance of recovery as he would have had if his tuberculosis had not been complicated by diabetes.

Id.—By the use of insulin, controlled by blood sugar estimations, Hart and Creel have succeeded in handling a severe case of diabetes complicating chronic, active pulmonary tuberculosis; it brought the blood sugar down within nine days from 0.4 to 0.1 and rescued the patient from the brink of diabetic coma.

Reactions of Body Cells in Tuberculosis.—The problem as stated by Pottenger is this: "If ever we are to understand why one patient breaks down with active clinical tuberculosis, while another with the same infection does not; or, if we are to understand why one lesion will heal, while another one with apparently the same extent of infection will not; in short, if we are to understand the principles which underlie the defense of the body against the bacillus, we must not be satisfied with the usual conception of tuberculosis, but we must understand what cellular activity means; what causes it; what interferes with it, and what part it takes in the bodily reaction of disease." The points dwelt on by Pottenger are these: The cell and cellular activity; the effect of nerve stimulation on cells; protein digestion and tuberculous toxemia; the toxemia of tuberculosis and the nervous system; toxic systems of tuberculosis and the reflex symptoms of pulmonary tuberculosis. He also reviews the more important facts which have been brought out in recent years in physiologic and biochemical laboratories, and shows the important bearing which they have on the understanding of clinical tuberculosis.

Standardization of Tuberculin.—Roemer's work on the intracutaneous tuberculin test in guinea-pigs, Lewis and Aronson believe, forms the basis for an improved method of standardizing tuberculin. If the test animals are infected intraperitoneally with 0.1 mg. of a virulent culture, they may be fit for use (sufficiently sensitive, that is) in three weeks. In other instances, this point may take longer to reach. Renewed attention is called to the skin reaction in the belief that all of the essential facts are at hand which would permit a revised method which might, perhaps, be economical of time and animals and which might in practice be more accurate than that at present in use.

Immunologic Studies in Tuberculosis.—The work recorded by Petroff concerns itself with the reaction of the animal body to injections with substances extracted from pulverized tubercle bacilli, and a comparison of these reactions with those induced by the injection of dead tubercle bacilli and by infection with living bacilli. The work is a direct continuation of a general plan for the investigation of immunity in tuberculosis. So far the following facts have been demonstrated: Manifestations of skin hypersensitiveness may be elicited in animals infected with living tubercle bacilli, not only with old tuberculin and the tuberculins hitherto in general use, but also with a fraction of powdered tubercle bacillus extracts ("nucleoprotein" fraction) which is precipitable by acetic acid in the cold. It may also be elicited by the "residue" antigens, described by Zinsser, from which all "nucleoproteins" and coagulable proteins have been removed; the skin reactions produced with these so-called "residue" materials are qualitatively identical with the reaction produced with old tuberculin and "nucleoprotein," but they are sometimes a little weaker. When guinea-pigs are systematically treated with considerable quantities of the so-called "nucleoprotein" fraction of the extracts, skin hypersensitiveness of a mild type may be elicited in many of the animals. Such skin hypersensitiveness, however, cannot definitely be claimed to be identical with tuberculin hypersensitiveness. The reactions are usually less marked than similar ones produced with the same materials in tuberculous guinea-pigs; they fade more rapidly, and they never lead to deep injury of the tissues. It will remain uncertain, until further studies have been carried out, whether these reactions are a specific nucleoprotein hypersensitiveness that has no immunologic relationship to the skin reactions observed in tuberculous animals, or whether they represent a milder form of the typical tuberculin reaction. The so-called "residue" materials injected in considerable quantities have never elicited any kind of skin hypersensitiveness to any of the various preparations used. Complement fixing and precipitat-

ing antibodies may be produced in rabbits by the injection of dead tubercle bacilli, living bacilli and the "nucleoprotein" fraction. In no case have the "residue" materials induced any kind of demonstrable antibody formation.

Annals of Medical History, New York

5: 95-188 (June) 1923

Chinese Household Manual of Obstetrics. J. P. Maxwell, London.—p. 95.
Joseph Leidy, Scientist. W. S. Middleton, Madison, Wis.—p. 100.
Lewis Hermann, Surgeon in United States Navy. F. L. Pleadwell and W. M. Kerr.—p. 113.
Dr. John Memis and His Title. J. H. Lloyd, Philadelphia.—p. 146.
Overlooked Painting of Saint Roch. C. G. Cumston, Geneva, Switzerland.—p. 149.
Outlines of History of Medicine in Lower Canada, Under French Regime. M. Charlton.—p. 150.

Boston Medical and Surgical Journal

189: 303-334 (Aug. 30) 1923

Differential Diagnosis of Acute Abdominal Conditions in Childhood. J. S. Stone, Boston.—p. 303.
*Diverticulitis of Cecum; Report of Three Cases. R. W. French, Fall River.—p. 307.
*Drop Wrist. E. M. Ellison, Washington, D. C.—p. 309.
Determination of Standard (Basal) Metabolism of Patients by Recording Apparatus. A. Krogh, Copenhagen.—p. 313.
Who Should Be "Pay Clinic Patients"? R. E. Chaddock and M. M. Davis, Jr.—p. 317.

Diverticulitis of Cecum.—Diverticulitis of the cecum, though rare, commands interest because of the difficulty of its differentiation from carcinoma, tuberculous or appendical abscess. In two of the three cases cited by French the preoperative diagnosis was chronic appendicitis and malignant disease of the ascending colon, respectively. In the third case the diagnosis was diverticulitis of the cecum and ascending colon.

Traumatic Drop Wrist.—Ellison reports a case of drop wrist occurring in boy, aged 7, whose mother had seen fit to bind him with a small rope about his chest, tying the arms two inches above the elbows securely behind his back, and to suspend him bodily from the ceiling in the furnace room for approximately forty minutes. The boy struggled rather constantly during this period but was unable to extricate himself. When he was finally "cut down," his "executioner" found him absolutely helpless so far as his hands were concerned. He recovered the use of his hands after five months.

Bulletin Lying-In Hospital of City of New York

12: 219-265 (Aug.) 1923

Problems of Obstetric Practice. W. W. Chipman, Montreal.—p. 219.
Functional Dystocia in Normal Pelves: Recognition and Management. J. A. Harrar.—p. 239.
Fibroid Tumors Complicating Pregnancy and Their Treatment. G. W. Kosmak.—p. 245.
*Hemorrhages in New-Born. L. A. Wing.—p. 253.
*Bacterial Endocarditis Complicating Pregnancy. M. Rosensohn.—p. 259.
Placenta Praevia in Twin Pregnancy. M. Rosensohn.—p. 260.
*Rupture of Uterus Through Scar of Former Cesarean Operation. G. W. Kosmak.—p. 261.
*Analysis of Mortality Statistics of Lying-In Hospital for 1922. M. Rosensohn.—p. 264.

Hemorrhages in New-Born.—The following points are emphasized by Wing: Hemorrhages developing in the infant during birth or shortly after, are of greater frequency than was formerly believed; they often occur in babies born spontaneously. Sudden or severe compression of the child's head, either by the natural forces of labor or by some obstetrical procedure, is the chief mechanical cause of intracranial lesions. Asphyxia of the infant during birth has an influence on the stability of the blood and impairs the clotting power. This renders these infants especially susceptible to both immediate and delayed hemorrhagic lesions. Therapeutic measures, to be effective in these cases, should be employed early in their development; the attending obstetrician should thoroughly appreciate his responsibility for the early recognition of hemorrhagic conditions in the new-born.

Bacterial Endocarditis Complicating Pregnancy.—Rosensohn's patient gave a history of several attacks of rheumatism. Her chief complaint during pregnancy was shortness of breath on exertion. She was delivered by a low forceps operation of a full term living child, there being a first degree laceration which was immediately repaired. Her temperature, which was normal on admission, rose to 100 F. on the second day, fluctuating for the first ten days with slight remissions around 101 F., after that with greater remissions around 103 F. When first seen, the patient showed the evidence of a decompensated double mitral lesion, tachycardia, marked anemia with pulsating jugular vessels and a liver which reached about 6 cm. below the free border of the ribs in the midclavicular line. There was no splenic or bone tenderness, and there were no petechiae anywhere. A specimen of urine by catheter showed no red blood cells. The leukocytes numbered 10,000. The appearance of the patient, the febrile reaction, the cardiac lesion and the negative pelvic condition rendered the diagnosis of bacterial endocarditis most likely. A blood culture taken a few days later showed the presence of a nonhemolytic streptococcus. Fifty-four days postpartum the patient died with evidence of gradual cardiac failure. Necropsy was not obtained.

Rupture of Uterus Through Cesarean Section Scar.—Only seventeen months had elapsed between the birth of the last child and the present accident in the case cited by Kosmak. On opening the abdomen he found an intact amniotic sac, with a fetus apparently at term, occupying the greater portion of the right half of the abdominal cavity. The placenta was at the lower pole of the sac and slightly attached to a rent in the anterior surface of the uterus. The child was dead.

Mortality Statistics of Lying-In Hospital.—Rosensohn reports twenty-two obstetric deaths for 1922 out of 5,467 cases cared for by the Lying-In Hospital. This is a mortality of 0.4 per cent., or one for about every 248 cases. There were 137 cesarean operations, with five deaths, a mortality of 3.65 per cent., or one in 27.4 cases; 26 cases of placenta previa, with six deaths a mortality of 23 per cent., or one in 4.3 cases; three deaths from ruptured uterus, a mortality of 75 per cent.; four deaths from postpartum hemorrhage; one death from necrosis of the liver with toxemia of pregnancy; one death from pyelonephritis and perinephric abscess; postpartum sepsis with *Bacillus coli* and streptococcus in the blood; one death from puerperal sepsis, and one death from eclampsia.

Florida Medical Association Journal, St. Augustine and Jacksonville

10: 1-32 (July) 1923

Endocervicitis, or Infected Cervix Uteri. W. M. Rowlett, Tampa.—p. 1.
Immediate Effect of Radium Treatment on Symptoms of Uterine Cancer. G. R. Holden, Jacksonville.—p. 3.
Some Ocular Complications Observed in Dengue Fever. S. A. Richardson, Jacksonville.—p. 5.
Insulin in Diabetes. S. Harris and J. P. Chapman, Birmingham, Ala.—p. 8.
Control of Diphtheria. B. L. Arms, Jacksonville.—p. 10.
Superstition and Medicine. R. H. Knowlton, St. Petersburg.—p. 13.
Obstetric Anesthesia. Why and How. C. D. Rollins, Jacksonville.—p. 15.
Relation of Local Surgeon to Railroad. T. M. Rivers, Kissimmee.—p. 18.
Useful Leg Splint. J. H. Pierpont, Pensacola.—p. 21.

California State Journal of Medicine, San Francisco

21: 237-276 (June) 1923

Certain Factors to be Considered in Judging Effects of Prohibition in Relation to Use of Narcotics. L. D. Volk, New York.—p. 237.
Surgical Treatment of Duodenal and Gastric Ulcer. W. B. Coffey, San Francisco.—p. 242.
Osteitis Fibrosa Cystica Occurring in Flat Bone (Inferior Maxilla). Report of Case. A. H. Galvin, Anaheim, Calif.—p. 244.
Choice of Method of Surgical Delivery at Near Full Term. L. Peters, Alameda, Calif.—p. 246.
*Case of Human Actinomycosis. F. W. Rinkenberger.—p. 249.
*Tuberculin in Tuberculous Iritis. L. S. Mace.—p. 251.
Classification of Physiotherapy Apparatus and Suggestions for Standard Equipment. M. Penfield, San Francisco.—p. 253.

Actinomycosis.—Rinkenberger's patient had a lesion on the right hip, midway between the greater trochanter and the crest of the ilium, which progressed slowly. There were three or four open sinuses, in the discharge from which the granules were found. The mass was thoroughly cleaned out and packed with iodoform gauze, which, however, in about forty-eight

hours, caused symptoms of iodoform poisoning, so from that time on the wound was packed with plain gauze. The man also received about 300 grains (19.5 gm.) of iodids daily for many days at a time, and heavy roentgen-ray treatment. The lesion cleaned up rapidly under daily packing with balsam of Peru alternated with swabbing out with 33⅓ per cent. silver nitrate solution.

Tuberculin in Tuberculous Iritis.—Mace endorses the use of tuberculin in iritis. He says that in eye tuberculosis, as in throat tuberculosis, the physician can watch from day to day the effect of his dosage. He can see the reactions and accurately gage and space his doses accordingly.

Illinois Medical Journal, Oak Park

44: 77-152 (Aug.) 1923

Narcotic Drug Addiction and Narcotic Laws. E. S. Bishop, New York. —p. 107.
Lamentable Social Facts. L. A. Stone, Chicago.—p. 116.
*Association of Life Insurance with Medical Profession. O. F. Maxon, Springfield.—p. 119.
Present Status of Venereal Disease Control. C. C. Pierce, Chicago. —p. 124.
Corneal Injuries in Industrial Occupations. F. Allport, Chicago. —p. 128.
Practical Points of Interest in Embryology and Their Relation to Kidney Surgery. G. V. A. Brown, Detroit.—p. 133.
Radium Emanation Ampoules in Treatment of Cancer of Tongue. F. E. Simpson, Chicago.—p. 139.
Adventitious Sounds. W. H. Watterson, LaGrange.—p. 143.
Medical Men Who Have Attained Fame in Other Fields of Endeavor. W. M. Thompson, Chicago.—p. 144.

Medico-Actuarial Life Insurance Statistics.—Maxon says that the medico-actuarial investigation of the mortality of life insurance companies has placed at the door of preventive medicine statistical material and facts of the utmost value. They can offer statistical material showing the remote effects of disease and symptoms in classes that run into the thousands and in some instances the hundred thousands, covering long periods of time. Those records are now available to all who may be interested in public health, health conservation or similar work and it is the sincere wish of the life companies that the medical profession call upon them at any time for this information.

Journal of Bone and Joint Surgery, Boston

5: 397-628 (July) 1923

*Loose Bodies in Joints and Bursae Due to Synovial Osteochondromatosis. M. S. Henderson and H. T. Jones, Rochester, Minn.—p. 400.
Evolution of Fracture Treatment, or What Have Been Real Changes. S. L. McCurdy, Pittsburgh.—p. 425.
*Treatment of Tuberculosis of Knee Joint in China. T. Stearns, Tsinan, China.—p. 437.
*Bilateral Asymmetrical Cessation of Growth of Unknown Etiology in Epiphyses. R. D. Severance, Rochester, N. Y.—p. 443.
*Some Etiologic Factors in Surgical Tuberculosis of Childhood. W. H. Cole, St. Paul.—p. 445.
Arthrodesing Operation on Feet. E. W. Ryerson, Chicago.—p. 453.
*Hamstring Transplantation for Quadriceps Paralysis. P. C. Colonna, New York.—p. 472.
*Experimental Incision on Cadaver for Drainage of Ankle Joint. S. D. David, Boston.—p. 480.
*Surgical Approach for Step Operations on Femur. A. Krida, New York.—p. 484.
Dorsal Wedge Operation for Metatarsal Equinus. R. Stephens, New York.—p. 485.
Postoperative Retentive Apparatus (Adhesive Plaster) for Torticollis Cases. R. M. Hoover, New York.—p. 490.
Treatment of Chronic Bone Abscesses by Simple Evacuation Through Small Drill Hole. Its Application in Nonsterile Abscesses. W. M. Brickner, New York.—p. 492.
New Portable Plaster-of-Paris Spica Frame. L. A. O. Goddu, Boston. —p. 501.
*Case of Osteomyelitis of Ulna, with Complete Regeneration, in Old (66) Patient. L. A. O. Goddu, Boston.—p. 502.
*Study of Necropsy Specimens of Fused Spines and Cases Subjected to Secondary Operation. A. DeF. Smith, New York.—p. 507.
Flattened Hip Socket and Its Sequelae. M. Jansen, Leiden, Netherlands.—p. 528.
Measurement of Range of Motion of Joints. D. Silver, Pittsburgh. —p. 569.
*Relation of Lesions of Transverse Processes to Pain in Back and Legs. G. I. Bauman, Cleveland.—p. 579.
*Nonspinal Psoas Abscess. W. S. Baer, G. E. Bennett and I. W. Nachlas, Baltimore.—p. 590.

Loose Bodies in Joints.—It is the opinion of Henderson and Jones that osteochondromatosis of the synovial membrane is one of the causes of osteocartilaginous loose bodies in the joints, and probably the sole cause of the bodies in the bursae and tendon sheaths. They believe that the condition should be classified as a benign neoplasm. Trauma is a secondary factor. One of their cases was associated with a malignant chondrosarcoma in the lower end of the femur. No malignancy was discovered in the knee joint. Removal of all the bodies relieves the patient in the majority of instances. Amputation or resection has not been found necessary for synovial osteochondromatosis.

Treatment of Tuberculosis of Knee Joint in China.—Records of six cases are cited by Stearns, in all of which there is a good functional result from nine months to four years after operation. In one case, now under observation and in good general condition, there is almost firm union and a favorable result is to be expected. The report of one case received indirectly gives complete healing and firm union, but the patient experiences some difficulty in doing her work. Stearns urges that both with adults and children in poor economic condition, with no pulmonary contraindication, joint resection be done as soon as a positive diagnosis is made. In adults, during the early stage with good economic conditions, conservative treatment (splint or cast) may be used as long as there seems to be no progression of the disease. In children in the early stage, with economic and home conditions good, the conservative treatment should be given a trial. Should there be no improvement after nine months or a year, or should progression of the disease be evident, resection is advised, provided there is no pulmonary contraindication. In adults, with general condition poor, or with incipient pulmonary tuberculosis, amputation above the knee is indicated. In children, in poor general condition or with incipient pulmonary tuberculosis, conservative treatment should be attempted for about six months. Should the general condition not improve, amputation should be advised. When the general condition of the patient is good, the presence of a sinus from the joint is not a contraindication for resection of the joint. The mortising of the two bones is the operative choice. The joining of the two bones together by bone plates gives a quicker bony union than uniting the bones with kangaroo sutures passed through holes on the two sides of the leg.

Bilateral Asymmetrical Cessation of Growth in Metacarpals.—Severance records a case of asymmetrical bilateral cessation of growth of the metacarpals. The deformity was first noticed in the left hand about one year before, and shortly afterward in the right. Both have progressively increased. There was no history of injury, disease, malnutrition, or other etiologic factor. No hereditary influence was obtainable in the history.

Etiologic Factors in Surgical Tuberculosis of Childhood.—Poor home conditions, insufficient or improper food, lack of fresh air and sunshine, and the presence of unhygienic surroundings, in general, Cole says, seems to be as important, if not more important in the etiology of surgical tuberculosis, than tuberculosis in the immediate family.

Hamstring Transplantation for Quadriceps Paralysis.—Careful study of twenty-four cases which returned for examination and the records of seventy-seven others has convinced Colonna that satisfactory functional results with hamstring transplantation for quadriceps paralysis are the rule rather than the exception. Any accompanying deformity should, if possible, be corrected before transplantation. If sufficient strength exists in the biceps, transplantation of this muscle usually gives better results than those obtained by using the inner group of hamstrings. Negative results are apt to follow if the extensors of the hip are also paralyzed. From a physiologic standpoint it is interesting to consider how the afferent stimuli, accustomed as they are in initiating the motor response to "flex," can be reeducated and taught to produce what would appear to be contradictory effects.

Drainage of Ankle Joint.—In thirteen experiments on thirteen ankle joints of the cadaver David proved that the posterior external approach was reliable and safe, as far as encouraging important structures is concerned. The joint cavity is easily accessible by this route, and with the foot dorsiflexed to a right angle, evacuation of fluid was complete.

The posterior compartment is formed by the posterior surface of the trochlea, the anterior being formed by the relaxation of the anterior ligament over the neck of the astragalus.

Surgical Approach for Step Operations on Femur.—Krida makes a curved skin incision on the front of the thigh. Beginning in the upper third of the thigh in the midline, it curves externally, then downward, then inward, to a point one inch above and internal to the patella. The skin flap is reflected. The first incision in the deep fascia is made in the line between the vastus externus and the rectus femoris. Beginning from below, these muscles are separated to a point rather above the middle of the thigh. This exposes the lateral surface of the crureus. The lateral surface of the femur is exposed by an incision through the crureus and periosteum. A saw cut of the required length is made with the motor saw. The saw cut should be sufficiently long to allow at least a two-inch approximation of the two halves of the step. The second incision in the deep fascia is made in the line between the vastus internus and the rectus femoris. These muscles are then separated, beginning from below and extending upward as high as the separation on the outer side. This exposes the medial surface of the crureus. The medial surface of the femur is exposed by an incision through the crureus and periosteum, and a saw cut of equal length to the first and opposite to it is made. The step is completed by passing a Gigli saw subperiosteally and sawing from behind at the upper end, and from before at the lower end.

Complete Regeneration of Ulna in Aged After Removal.—In April, 1922, Goddu removed the entire ulna subperiosteally for osteomyelitis. This was the only operation that the condition of the patient seemed to permit. Within two months an entire new ulna regenerated. The patient was 66 years of age.

Ultimate Results of Operation for Fusion of Spine.—Examination of ten necropsy specimens and clinical cases has convinced Smith that fusion of the spine may be accomplished by the Hibbs operation in practically all cases. In a series of 221 operated cases, including both those of scoliosis and tuberculosis, failure of fusion occurred in only one case. The cause of failure to obtain fusion is either inaccurate operative technic in securing bone contact, or infection.

Lesions of Transverse Process Cause Leg Pains.—In cases of lumbosacral pain and in cases with pain referred down the leg, whether with or without definite history of injury, Bauman urges that the possibility of anomalies of or injury to transverse processes should be given careful consideration in differential diagnosis. Twenty cases are reported. Operation was done in nineteen with good results.

Nonspinal Psoas Abscess.—Baer et al. point out that there exist a large group of cases of psoas abscess which originate from sources other than spinal or pelvic bone involvement; that lymphadenitis of the retroperitoneal lymph glands exists with either a tuberculous or a septic organism as the infecting agent; and that these conditions are to be clearly differentiated from spine or hip involvement.

Journal of Experimental Medicine, Baltimore

38: 117-232 (Aug.) 1923

Presence of Bacteria in Lungs of Mice Following Inhalation. E. G. Stillman, New York.—p. 117.
Production of Heterogenetic Antibodies with Mixtures of Binding Part of Antigen and Protein. K. Landsteiner and S. Simms, New York.—p. 127.
Infectious Ophthalmia of Cattle. F. S. Jones and R. B. Little, Princeton, N. J.—p. 139.
*Studies on Pneumococcus Immunity. II. Active Immunization of Monkeys Against Pneumococcus Types II, III and IV Pneumonia with Homologous Pneumococcus Vaccine. R. L. Cecil and G. I. Steffen, New York.—p. 149.
*Id. III. Nature of Pneumococcus Antigen. W. A. Perlzweig and G. I. Steffen, New York.—p. 163.
*Conditions Determining Transplantability of Tissues in Brain. J. B. Murphy and E. Sturm, New York.—p. 183.
*Enzymes of Pneumococcus. IV. Bacteriolytic Enzyme. O. T. Avery and G. E. Cullen, New York.—p. 199.
Studies on Bacterial Nutrition. IV. Effect of Plant Tissue on Growth of Pneumococcus and Streptococcus. H. J. Morgan and O. T. Avery, New York.—p. 207.
*Complement Fixation Reaction as Applied to Leprosy. P. A. Lewis and J. D. Aronson, Philadelphia.—p. 219.

Active Immunization of Monkeys Against Pneumonia.—The results of subcutaneous or intravenous injection of monkeys with pneumococcus Types II, III and IV are reported by Cecil and Steffen. Three subcutaneous injections of pneumococcus Type II vaccine conferred on monkeys a complete immunity against experimental pneumococcus Type II pneumonia. A similar protection can be bestowed on monkeys against pneumococcus Type IV pneumonia by three subcutaneous injections of a vaccine prepared from the corresponding strain of pneumococcus. The subcutaneous injection of monkeys with three doses of pneumococcus Type III vaccine confers a complete immunity against this type in only 50 per cent. of cases (four out of eight monkeys vaccinated). In spite of the immunity induced in monkeys by three subcutaneous injections of pneumococcus Types II, III and IV vaccine, specific protective bodies against the homologous types are not demonstrable in their serums when the vaccine is so administered.

Nature of Pneumococcus Antigen.—From the experiments reported by Perlzweig and Steffen it appears that pneumococcus antigen is nonlipoidal, that it probably adheres to the protein fraction in a loose chemical or physical union rather than representing a protein complex of a large molecular size, as shown by its solubility in alcohol, its thermostability, and its resistance to proteolytic digestion. Some of the antigens studied have been shown to contain a nonspecific factor promoting the growth of bacteria. The purified pneumococcus antigen solutions are nontoxic for mice.

Transplantability of Tissues in Brain.—In confirmation of Shirai's observation, Murphy and Sturm have found that transplantable mouse tumors grow actively when inoculated into the brains of rats, guinea-pigs and pigeons, whereas subcutaneous or intramuscular grafts in the same animals fail. This growth of foreign tissue in the brain, however, takes place only when the grafted material lies entirely in the brain tissue; if it comes in contact with the ventricle a cellular reaction takes place with resultant destruction of the graft. The growth of foreign tissue in the brain may be completely inhibited by simultaneous inoculations of a small bit of autologous but not by a bit of homologous spleen tissue. Mice highly immune to subcutaneous transplants of mouse cancer show no resistance to such tumors when the inoculation is made into the brain. Although the brain is without obvious power of resistance to implants of transplantable heteroplastic mouse tumors, yet grafts of spontaneous tumors fail to grow there, as a rule, when the tumor implanted and the animal host are of the same species.

Enzymes of Pneumococcus.—Avery and Cullen assert that pneumococci possess an active intracellular enzyme which causes lysis of heat-killed pneumococci of the same and heterologous types and to a less degree of a closely related organism, *Streptococcus viridans*. The optimum reaction for lysis lies between p_H 6 and 8. The bacteriolytic action is proportional to the concentration of the enzyme. Heating the enzyme for thirty minutes at 60 C. destroys its activity. The possible relation of the enzyme to autolysis is discussed.

Complement Fixation Reaction in Leprosy.—Of the forty-five specimens of serum obtained by Lewis and Aronson from thirty-nine cases of leprosy, four were anticomplementary in a dose of 0.1 c.c., but smaller quantities, except with one specimen, were not anticomplementary. A comparison of the anticomplementary property of nonleprous serum with that of leprous serum shows that while the nonleprous serums were anicomplementary in 2.3 per cent. of 604 serums examined, serums from leprosy cases were anticomplementary in 8.8 per cent. of forty-five cases studied, when the same dose of serum was employed. Control serums from normal persons, from cases of tuberculosis, or from cases of syphilis failed to react with certain antigens, whereas serums from cases of leprosy have so reacted in more than 93 per cent. of those tested. The most characteristic fixation given by the leprosy serum is that with *Bacillus leprae* (Clegg) used as antigen, either in the form of a bacterial emulsion or of an alcoholic extract of the dried culture. Leprosy serum is not deprived of the complement-fixing body when treated with either *Bacillus tuberculosis* or *Bacillus leprae* (Clegg).

Kentucky Medical Journal, Bowling Green

21: 439-516 (Sept.) 1923

Diseases of Gallbladder. E. W. Northcutt, Covington.—p. 478.
Review of Gallbladder Anatomically and Physiologically. J. D. Northcutt, Covington.—p. 483.
The M. D. Doctor. W. A. Bush, Winchester.—p. 487.
Typhoid Fever Then and Now. W. Byrne, Sr., Russellville.—p. 489.
Eyestrain and Its Causes. A. L. Bass, Louisville.—p. 492.
Nervous Phenomena Relieved by Removal of Septal Spur: Case Report. S. G. Dabney, Louisville.—p. 493.
Roentgenographic Gastro-Intestinal Survey. C. D. Enfield, Louisville. —p. 494.
Prevention of Disease. J. W. Barnhill, Owensboro.—p. 497.
Detached Gangrenous Epiploic Appendage. Case Report. G. P. Grigsby, Louisville.—p. 499.
Cerebrospinal Fluid and Its Relation to Diagnosis and Treatment of Neurosyphilis. C. Thompson, Louisville.—p. 500.
Pyloric Stenosis. Report of Case. F. G. Speidel, Louisville.—p. 512.

Nebraska State Medical Journal, Norfolk

8: 261-300 (Aug.) 1923

Nature and Treatment of Interstitial Goiter. A. E. Hertzler, Kansas City, Mo.—p. 261.
Appendicitis or What? J. M. Mayhew, Lincoln.—p. 265.
Perforated Gastric and Duodenal Ulcer. A. C. Stokes, Omaha.—p. 267.
Transverse Incision in Surgery of Kidney. J. E. Summers, Omaha. —p. 273.
Some of Problems in Caring for Insane. D. G. Griffiths, Lincoln. —p. 276.
Specific Hypersensitiveness or Allergy as Common Cause of Illness. W. W. Duke, Kansas City, Mo.—p. 279.
Syphilis and Syphilis-Like Affections of the Mouth. A. Schalek, Omaha.—p. 285.
Management of Acute Sinus Infections. J. C. Tucker, Beatrice. —p. 287.
Missed Abortion. C. H. Water, Omaha.—p. 289.

New Orleans Medical and Surgical Journal

76: 57-110 (Aug.) 1923

*Etiology of Rickets. L. v. Meysenbug, New Orleans.—p. 57.
Headaches with Reference to Some Phases of Refraction. M. F. Meyer, New Orleans.—p. 61.
*Case of Silent Calculous Pyonephrosis. H. B. Gessner, New Orleans. —p. 66.
Charity Hospital of Louisiana. A. E. Fossier.—p. 67.
Smallpox. J. G. Stulb, New Orleans.—p. 75.
Carbon Tetrachlorid in Treatment of Hookworm Disease. Report of Cases. S. Hobson, New Orleans.—p. 80.
One Hundred Per Cent. Results in Treatment of Typhoid (Rest, Diet; Balneotherapy; Elimination). S. J. Couvillon, Moreauville, La. —p. 84.
Treatment of Tetanus. A. A. Herold, Shreveport, La.—p. 88.
Conception of Psychoneuroses and Some Errors to Be Avoided in Their Diagnosis. E. McC. Connely, New Orleans.—p. 91.
Practical Points on Signs and Symptoms in Diagnosis of Early Pulmonary Tuberculosis. E. A. Bertucci, New Orleans.—p. 95.

Etiology of Rickets.—The greatest advance in the rickets problem, Meysenbug says, has emanated from the laboratory within the last half decade. Investigations both here and abroad are bringing more sharply into focus the importance of sunlight and the ultraviolet rays of artificial light and the substance or substances in cod liver oil which exercise such a profound influence over the calcium and phosphorus metabolism of the body.

Silent Calculous Pyonephrosis.—Gessner reports a case in which, notwithstanding the efforts of medical men armed with the equipment of a good hospital, a diagnosis was arrived at only at necropsy. Evidence on which the diagnosis might have been made, though this was not strong or conclusive, was the pain in the back, described as "terrible backache" which was complained of on the day of onset, but not again during the remaining eighteen days. Another sign was bloody looking urine reported by the practitioner in charge of the case as occurring on the first three days following the onset, but not present thereafter in the gross, nor confirmed by microscopic examinations. Gessner feels that no doubt jamming of the stone into the apex of the pelvic funnel accounts for the complete absence of pus and blood from the urine. Reexamination of the roentgenograms after the necropsy showed the shadow of the stone very clearly.

South Carolina Medical Association Journal, Greenville

19: 529-556 (July) 1923

Difficult Feeding Case Principles. W. P. Cornell, Columbia.—p. 532.
Artificial Feeding of Well Child During First Year. W. Rhett, Charleston.—p. 535.
Feeding During Second Year. S. G. Glover, Greenville.—p. 540.

Southwestern Medicine, Phoenix, Ariz.

7: 273-312 (Aug.) 1923

*Hay-Fever in Central Arizona. E. W. Phillips, Phoenix, Ariz.—p. 273.
Dependence of Surgical Procedures on Biologic Processes. J. S. Horsley, Richmond, Va.—p. 282.
Prognosis and Treatment of Chronic Arthritis. E. D. Kremers, Pasadena, Calif.—p. 285.
Type and Topography in Tumor Prognosis. A. E. Hertzler, Halstead, Kan.—p. 293.
Easily Overlooked Condition. A. W. Vanneman, Cumpas, Sonora, Mexico.—p. 297.

Hay-Fever in Arizona.—Phillips says that the irrigated valleys of Arizona have a continuous hay-fever season of nine months. The common shade trees, cottonwood and ash, account for the first two months of this, and Bermuda grass, the chief offender, covers the remaining seven months, sharing the latter half of its period with the pigweeds. Minor and local causes are rabbit bush, Johnson grass and the saltbushes. In the hill country, the main hay-fever season begins in June with the pollens of the Russian thistle and the pigweeds. In August the bur ragweeds come on, much as do the true ragweeds in the East. Minor and local causes include the wormwoods, the saltbushes and the western ragweed. Wherever Bermuda grass is abundant, it causes trouble all summer. Northern Arizona, and northern New Mexico so far as that has been studied, have a similar arrangement, except that Russian thistle is the chief hay-fever plant, while the wormwoods take rank over the ragweeds.

U. S. Naval Medical Bulletin, Washington, D. C.

19: 115-256 (Aug.) 1923

Compression Fractures of Lower End of Radius. J. H. Stevens.—p. 115.
Juxtapyloric Ulcer. G. P. Cottle.—p. 128.
Samoan Medicines and Practices. D. Hunt.—p. 145.
Deformities of Nose. F. E. Locy.—p. 152.
Surgical Solution of Chlorinated Soda. J. Holden.—p. 156.
Stone in Right Kidney Diagnosed Appendicitis. A. H. Robnett.—p. 158.
Two Cases of Arsphenamin Poisoning. J. Buckley.—p. 162.
Lipoma of Ischiorectal Fossa. L. Humphreys.—p. 164.
Method of Boiling Drinking Water for Use in Camp. C. I. Wood.—p. 166.
Fatal Case of Caisson Disease. C. P. Archambeault.—p. 167.
Foreign Body (Calcified Cork) in Nares. C. B. Camerer.—p. 168.
Nasal Polyp with Unusually Long Pedicle Originating in Antrum and Extending Back Into Pharynx. P. M. Albright.—p. 169.
Report on Sanitary Conditions of Second Brigade, U. S. Marines, Santo Domingo, for 1922. J. J. Snyder.—p. 170.

Virginia Medical Monthly, Richmond

50: 351-426 (Sept.) 1923

Treatment of Certain Types of Goiters. S. McGuire, Richmond.—p. 351.
*Treatment of Lobar Pneumonia Due to Pneumococcus Infection. L. F. Barker, Baltimore.—p. 356.
Intradural Surgery in Its Relation to Abscess of Brain. W. P. Eagleton, Newark, N. J.—p. 367.
Recent Advances in Diagnosis and Treatment of Syphilis. W. T. Vaughan, Richmond.—p. 372.
Some Results of Protein Sensitization Work in Bronchial Asthma, Hay-Fever and Allied Conditions. Report of Cases. G. T. Brown, Washington, D. C.—p. 379.
Fever. W. B. Blanton, Richmond.—p. 384.
Mental Diseases. J. A. Strickland, Norfolk.—p. 389.
Physical Examination of Lungs in Diagnosis of Pulmonary Tuberculosis. D. B. Cole, Richmond.—p. 393.
Prophylaxis of Tuberculosis. H. R. Edwards, Richmond.—p. 395.
Differential Diagnosis of Pulmonary Tuberculosis. W. N. Mercer, Richmond.—p. 397.
Granuloma Inguinale. C. F. Ross, Richmond.—p. 401.
Empyema. J. K. Gray, Marion.—p. 404.
Renal Tuberculosis. W. O. Poindexter, Newport News.—p. 407.
Bacillus Acidophilus as Therapeutic Agent. G. F. Reddish, Richmond. —p. 409.
Contused Abdomen. E. B. Claybrook, Cumberland, Md.—p. 411.
Tracheotomy; Improved Technic. E. G. Gill, Roanoke.—p. 413.

Treatment of Pneumococcus Pneumonia.—Though even with the use of quinin and ethylhydrocuprein the mortality rate in lobar pneumonia is still high, nevertheless, Barker points out, the reduction indicated by statistics would make it seem worth while to make a trial of the quinin therapy, at any rate until sufficiently large numbers of cases have been treated in different epidemics and in different places (with adequate control) to establish the value or the worthlessness of the remedy. It is conceivable, too, that further experimental work may yield a quinin derivative that is even more efficacious than any thus far tried. "Until the proof has been

brought, however, that quinin or some quinin derivative has, in reality, a specific effect in lobar pneumonia, let us remain sceptical, bearing in mind the fate of the long series of attempts at systematic therapy of this disease in the past."

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Medical Psychology, London

3: 1-80 (Jan.) 1923

*Causal Factors of Juvenile Crime. C. Burt.—p. 1.
Influence of Affective Factors on Measurement of Intelligence. C. A. Richardson.—p. 34.
Suggestion. J. C. Flower.—p. 39.
Freud's Theory of Wit. J. Y. T. Greig.—p. 51.

Causal Factors of Juvenile Crime.—Nearly 200 cases of juvenile delinquency, and, as a control series, 400 normal children have been investigated by Burt in parallel inquiries; and the various adverse conditions, discoverable in their family history, in their social environment, and in their physical, intellectual and temperamental status, have been ascertained and tabulated for each group. Delinquency in the young seems assignable, generally, to a wide variety, and, usually, to a plurality of converging factors; so that the juvenile criminal is far from constituting a homogeneous psychologic class. To attribute crime, in general, to either a predominantly hereditary or a predominantly environmental origin appears impossible; in one individual the former type of factor may be paramount; in another, the latter; while, with a large assortment of cases, both seem, on an average and in the long run, to be of almost equal weight. Heredity appears to operate, not directly through the transmission of a criminal disposition as such, but rather indirectly, through such congenital conditions as dulness, deficiency, temperamental instability, or the excessive development of some single primitive instinct. Of environmental factors those centering in the moral character of the delinquent's home, and, most of all, in his personal relations with his parents, are of the greatest influence. Psychologic factors, whether due to heredity or to environment, are supreme both in number and strength over the rest. Emotional conditions are more significant than intellectual; while complexes provide everywhere a ready mechanism for the direction of overpowering instincts and of repressed emotionality into open acts of crime.

British Medical Journal, London

2: 399-444 (Sept. 8) 1923

*Treatment of Acute Salpingitis. A. W. Bourne, V. Bonney, W. B. Bell and L. Phillips.—p. 399.
*Innervation of Uterus. B. Whitehouse and H. Featherstone.—p. 406.
*Treatment of Severe Uterine Hemorrhage by Radium. S. Forsdike.—p. 409.
Menorrhagia Treated by Intensive Roentgen-Ray Therapy. Report of Twenty Consecutive Cases. L. Martindale.—p. 411.
*Rupture of Abdominal Aorta: Death from Acute Intestinal Obstruction. C. Nicory.—p. 413.
*Three Cases of Gastric Carcinoma Presenting Unusual Features. C. E. S. Jackson.—p. 414.
Antistreptococcus Serum in Erythema Nodosum. A. H. Carter.—p. 414.
Harvest Bug. H. B. Gladstone.—p. 415.
Passing of Lower Denture. W. G. Pridmore.—p. 415.
*Diaphragmatic Hernia of New-Born. G. C. Adeney.—p. 415.

Treatment of Acute Salpingitis.—Many cases of acute salpingitis occur in young women soon after marriage in whom the certainty of future sterility is a real tragedy. Surgeons are sometimes apt to regard the "recovery" of the patient as the chief if not the only aim of treatment. Bourne claims that treatment should be designed for further results than "recovery." These (nonpuerperal) patients will frequently recover whether the gynecologist is present or not, but if treatment is not intelligent and prospective, the patient is condemned to the prospect of certain sterility and frequently to pelvic invalidism. If the tube is treated early, salpingostomy will give her a chance for childbirth, and if it is already too much damaged, salpingectomy will prevent permanent ill health.

Id.—If, Bonney says, it be shown that tubal function lost by inflammation can be restored by surgical means in a fair percentage of patients, then the case for conservation of the tubes at the primary operation is strengthened, for the surgeon, having failed in his first endeavor to restore the reproductive organs to their normal state, would still have another bolt to shoot. Removal of the tubes at the earliest possible moment is the least disastrous way out of a situation laden with disasters.

Id.—In acute salpingitis in which there is a febrile reaction, and in which the presence of pus in the pelvis demands interference, Bell limits operative procedures to posterior colpotomy. With regard to pure gonococcal infection the case is different; there is little danger to life, and in this condition operation may be tried. Undoubtedly some mild cases of gonorrheal salpingitis recover spontaneously. In most cases it does not appear likely that a cure will be effected by operation, since the interstitial portion of the tube will generally be occluded. Moreover, Bell doubts whether incision of the tube will lead to the disappearance of the organisms located in the mucosa.

Id.—Twenty-five cases were subjected to laparotomy by Phillips and reconstructive operations were performed in twenty cases. Of the twenty cases in which a working set of reproductive organs was left, five pregnancies have occurred. Except in one case no operation was performed more than two years ago. Three successes were in cases of bilateral salpingostomy, for closed club-ended tubes—one in a case of bilateral resection and anastomosis, and one in a case of bilateral incision and suture after separation of adhesions with resection of one ovary. No successes have so far followed in cases of partial salpingectomy and in operations performed at the uterine end of the tube.

Innervation of Uterus.—The clinical material on which Whitehouse and Featherstone based their observations was selected to ascertain the character and nature of uterine contraction at various periods of pregnancy, when the nervous impulses from the lumbosacral cord were eliminated by means of spinal anesthesia. Animal experiments were also made. The results confirm Fellner's views with regard to the corpus uteri, but differ from him on the question of the lower uterine segment and the cervix. The authors believe that the circular fibers of the uterus, both in corpus and cervix, are stimulated by the sympathetic system, and inhibited by the lumbar cord. The longitudinal fibers, on the other hand, both corporeal and cervical, also the longitudinal muscle in the vagina in the case of the rabbit, appear to be stimulated by lumbar cord impulses, and inhibited by the sympathetic. In other words, local paralysis of the lumbar cord, whether permanently by trauma or temporarily by spinal narcosis, produces marked contraction of the circular muscle fibers of the uterus as a whole, owing to uncontrolled sympathetic impulses, but the expulsive power is lost owing to paralysis of the longitudinal fibers. Similarly, weak or absent sympathetic impulses produce overaction of the longitudinal fibers and increased expulsive efforts. The tone of the uterus as a whole, however, is lost and the organ is "flabby" owing to paralysis of the circular fibers. There is a good deal of evidence, both experimental and clinical, which indirectly tends to confirm these suggestions. A note of warning is sounded in connection with the employment of spinal anesthesia in normal cases of labor. By its use dilatation of the cervix will be delayed, and even if administered at the commencement of the "second" stage, the expulsive power of the uterus is diminished. Consequently forceps delivery with its attendant risks will in all probability be required.

Radium Therapy of Uterine Hemorrhage.—Forsdike asserts that radium arrests uterine hemorrhage solely through its action on the endometrium. If a prolapsed ovary is lying near the uterus exposure to radium would certainly affect the ovary; chronic pelvic peritonitis would also be an absolute contraindication for the use of radium.

Rupture of Abdominal Aorta.—Nicory relates the case of a man, aged 52, very stout, a moderate drinker, without history of syphilis, who while walking was seized with severe intermittent pain in the right testis. On the following morning the pain had almost subsided, but returned on his attempting to walk. There was a slight rise of temperature each evening.

Two weeks later the pain in the testis returned suddenly, and he was admitted to hospital. The radial arteries were found to be rather rigid; the systolic blood pressure was 200 mm. The patient had passed a restless night owing to abdominal distention and the frequent eructation of gas by the mouth; later he commenced vomiting greenish fluid, which later in the day became brownish and of markedly fecal odor. Death occurred the same day. The Wassermann reaction was negative. The heart was markedly hypertrophied, but the valves were normal. Macroscopically, the thoracic aorta showed no abnormalities. The intestines were greatly distended with gas. A dark blue mass was bulging the parietal peritoneum in the right half of the abdomen. The ascending colon was embedded in the retroperitoneal mass, but the cecum and appendix were recognizable. Incision of the peritoneum revealed a large blood clot reaching to the upper pole of the right kidney and downward into the pelvis. The ascending colon had been separated from its peritoneal covering and was so completely surrounded and compressed by the clot that its lumen was almost obliterated. A portion of the clot in the immediate vicinity of the aorta was dark brown and harder than the rest; it was probably older and due to an earlier leak, which may have been responsible for the collapse and pain referred to the testis a fortnight before death. After clearing away the clot, there was found in the right wall of the aorta, 15 mm. above its bifurcation, a hole 12 by 6 mm.; and a calcareous plaque, beyond which the aorta had given way, and which was still attached to the edge of the perforation. The wall of the abdominal aorta above and below the site of rupture was almost completely calcified.

Cancer of Stomach.—One of Jackson's cases simulated chronic intestinal stasis; one simulated gallstones and the third simulated acute intestinal obstruction.

Diaphragmatic Hernia of New-Born.—Adeney's patient died three hours after birth. Postmortem examination showed a deficiency in the left side of the diaphragm, which was large enough to admit three fingers. The entire bowel, accompanied by the spleen, had herniated, and occupied the left thorax, displacing the heart to the right of the sternum, and reducing the left lung to two small tags of tissue. The contents of the hernia could be reduced easily, but soon returned to their thoracic lodging.

Lancet, London

2: 371-438 (Aug. 25) 1923

The Students' Number, 1923-1924.

2: 439-492 (Sept. 1) 1923

*Chronic Mastitis. G. Keynes.—p. 439.
*Operative Treatment of Vesical Diverticula. J. Swift Joly.—p. 445.
*Striae Distensae. F. B. Hobbs.—p. 452.
*Home Disinfection and Control of Scarlet Fever. K. Simpson.—p. 455.

Aberrant Physiology Cause of Chronic Mastitis.—It has commonly been held that chronic mastitis is caused by the presence of some obscure bacterial infection. Keynes cannot, however, discover any evidence in favor of the view that the inflammation is bacterial. In fact, he believes that bacteria take no share in the disease. All the available evidence seems to point to the conclusion that the breast is itself continually pouring into the lumen of its ducts and acini a possible source of irritation to which pathologic changes may be attributed. Should there be a partial failure in the process of reabsorption of fluid and scavenging of epithelial debris, then any such irritation will become accentuated. This, in its turn, will further interfere with absorption and may initiate abnormal cellular activity, and so a vicious circle will become established. There are very wide variations in the degree of irritation produced, and this variation occurs only as between individuals but also in different parts of the same breast. The variation may be both in the concentration of the irritants formed in the secretions and in the susceptibility of the cells exposed to its action. The reaction of one individual may lie chiefly in the direction of fibrosis; in another it may produce the various forms of abnormal epithelial activity. In one case, the results of irritation may become apparent after it has been acting for a relatively short time; in another it may be thirty or forty years before any pathologic change can be appreciated. But whatever the source of irritation may be, it is clear that the time factor is of great importance. It has been very commonly observed that an advanced degree of chronic mastitis is seen at an earlier age in women who have never borne children than in women who have passed through the healthful process of pregnancy and lactation, and this is confirmed by the figures already recorded. The explanation of this is to be found in the fact that during lactation the mouths of the mammary glands become unsealed, and the products of activity are removed. If a woman has a large family of children, this natural drainage is established with intermissions for a period of many years, and only as middle age approaches do the breasts again begin to feed on themselves. For this reason, chronic mastitis has been called a disease of the climacteric; but the condition really has its first beginnings when lactation ceased for the last time, perhaps ten years before. The normal nonlactating breast has no outlet through the nipple for the discharge of its secretions. Secretion must, therefore, be balanced normally by reabsorption. Chronic mastitis, though often associated with carcinoma, has not been proved to be "precancerous." Both may be due to the same cause. Chronic mastitis in its more advanced stages must be treated by operation. At an earlier stage natural drainage may be tried, or roentgen rays may be applied.

Invagination and Inversion of Vesical Diverticulum.—In one of the fourteen cases described by Jolly, he did a combined invagination and inversion of the sac, a method which, he says, can be employed in diverticula springing from any part of the bladder, but is particularly useful for dealing with large sacs situated deep in the pelvis. It is said to be eminently safe, as the outer surface of the diverticulum is well seen while the adhesions are being separated from it. It cannot be employed when the wall of the sac is too stiff to allow of invagination, but this is the only definite contraindication. Joly emphasizes the fact that no single operation is suitable for all cases. A preliminary cystotomy does more harm than good in most cases. The presence of a calculus either in the bladder or in the sac is an indication for excision of the diverticulum.

Cause of Striae Distensae.—In Hobbs' opinion, striae distensae are confined almost entirely to young adults between the ages of 12 and 22. At this age the skin is delicate and is growing rapidly, and the elastic tissue fibers rupture, allowing the white fibrous tissue and overlying epidermis to stretch, giving rise to striae distensae. Striae distensae may be associated with almost any febrile illness. The distention and ultimate cleavages of the skin may be caused in healthy individuals by the rapid accumulation of fat in the subcutaneous tissues of the axillae, thighs, etc. In other cases, it is due to a simple distention following an effusion into the subcutaneous tissues. Often the nutrition of the skin is impaired by some constitutional disease, and the main factor in these cases is the effect of posture—the striae occurring at the position of maximum tension.

Control of Spread of Scarlet Fever.—Simpson stresses the present inadequacy and inutility of home disinfection as a means of controlling the spread of scarlet fever. At best it is little more than a formal, much less than a complete proceeding, and, consequently, can neither reasonably prevent subsequent infection occurring in an already apparently disinfected home among susceptibles—susceptibles of school age being meanwhile excluded from school—nor the subsequent spread of the disease, once an outbreak has occurred which is almost entirely dependent on carriers and school attendance, rather than fomites, leaving out of account, for the present, sporadic cases met with from time to time in adults. Simpson is strongly of opinion that much of the funds at present spent on disinfection could be employed more usefully in creating a healthier state of the nasopharynx of the schoolchild by directing greater precision to the examination and treatment of all such defects discovered on routine medical inspection of schoolchildren, by preventing overcrowding in schools and by the prompt closure of all schools or school departments—public, private, and Sunday—in any area threatened with an outbreak of scarlet fever.

Archives des Maladies du Cœur, etc., Paris

16: 561-624 (August) 1923

Congenital Mitral Stenosis with Interauricular Insufficiency. A. Cramer and E. Frommel.—p. 561.
*Edema of Lung with Mitral Stenosis. C. Saloz and E. Frommel.—p. 570.
*Aneurysm of Aorta. C. Saloz and E. Frommel.—p. 578.
Trocar for Evacuation of Cardiac Edema. G. Galli.—p. 591.
Medical Oscillometry. R. Alexandre and R. Moulinier.—p. 593.

Acute Edema of Lung in Course of Mitral Stenosis.—Saloz and Frommel ascribe acute edema of the lung under these conditions to weakness of the left ventricle. Necropsy in a case described in detail showed that the heart of the small woman, aged 37, measured 14.5 by 18 cm. The mitral orifice was only 4 by 11 mm. in diameter.

Aneurysm of the Aorta.—This is a study of eighty-six cases of aneurysms above the diaphragm, with necropsy findings in sixty-nine. The clinical pictures with the different locations of the aneurysms are compared.

Archives de Médecine des Enfants, Paris

26: 329-392 (June) 1923

*Erythema Nodosum in Children. J. Comby.—p. 329.
*Epidemic Meningitis in Children. S. Samet-Mandels.—p. 343.
*Generalized Polyarthritis. A. Trèves.—p. 365.
*Congenital Hyperkeratosis. J. Comby—p. 370.

Erythema Nodosum in Children.—Comby's study of this subject is based on 172 personally observed cases. He regards it as an acute febrile disease resembling more the eruptive than an ordinary skin disease. The lower limbs alone were affected in 104 of the children, and both arms and legs in 67; in 1 case the arms alone, and in 2 children the erythema was unilateral. The nodules all gradually subsided without leaving a trace, and, except for albuminuria in 3 cases, there were no complications. It sometimes displayed a seasonal, epidemic and contagious character, which imposes the necessity for isolation although the contagiousness is slight. The child should be kept in bed during the febrile stage. He wraps the limb in cotton. An almost extinct tuberculosis may be fanned into a flame by it, and we know that the tuberculous child is particularly susceptible to all infections. Comby thinks that this is the extent of the connection between tuberculosis and erythema nodosum. Only 5 of the children were infants; 48 were between 2 and 5, and 42 between 10 and 15. There were 113 girls to 59 boys. One attack usually confers immunity, but convalescence is long and tedious.

Epidemic Cerebrospinal Meningitis in Children.—A children's hospital at Lodz had 74 cases in 1919 and 1921, and the disease seemed to be mostly a general infection, the meningitic symptoms predominating in the majority. In some cases, meningococcus pneumonia was the first localization and children succumbed to this when the meningitis had subsided under serotherapy. Started early, and kept up long enough, with adequate doses, serotherapy arrests the disease and cures it. Daily hot baths relieve the pains and the stiffness. The diagnosis is seldom clear in infants. When an infant becomes restless, with slight signs of dyspepsia, and the anterior fontanel is taut, lumbar puncture should be done at once. Tension of the fontanel is never misleading. The early diagnosis is even more important for infants than for older children, as from 90 to 100 per cent. die of those not given treatment. In 14 cases in infants not seen till the tenth day, all died but 3. In some of the children the mind seemed affected; in one case the mind seemed stimulated, the girl, aged 12, becoming a more zealous student after recovery. In one case acute pneumonia, in another typhus, and in a third meningeal hemorrhage simulated epidemic meningitis. The disease sometimes assumed a fulminating form, with death in less than twenty-four hours. In others, the disease dragged along for months to final fatal cachexia. Ten cases have been recorded in which the lumbar puncture fluid contained both meningococci and tubercle bacilli. If the dural sac is obstructed or the pus is too thick to flow, the antiserum should be injected at once into the ventricles. In France, type B predominates, but at Lodz type A, and a polyvalent antiserum was preferred. The final conclusion from the experiences related is to give large doses and keep them up a long time. In one case a total of 190 c.c. of the antiserum was injected intraspinally in ten days, with complete recovery of the 10 months' infant.

Generalized Polyarthritis.—At the age of 2 the joints swelled in turn and became painful; the child was treated for tuberculosis of the joints, but tuberculin tests have been constantly negative. Notwithstanding the absence of signs of syphilis in the family, neo-arsphenamin treatment was pushed and the child, now over 13, is practically cured. Growth of the right tibia was arrested by destruction of its epiphysis. This knee was the joint first affected and it had been immobilized in plaster for several months. The head of the fibula reaches nearly to the interline of the knee joint. The polyarthritis was evidently due to an infection which yielded to neo-arsphenamin after improvement under heliotherapy.

Congenital Keratosis.—Comby reviews some recent publications on hyperkeratosis, dyskeratosis and ichthyosis, and the relations between them.

Bulletin de l'Académie de Médecine, Paris

90: 113-131 (July 31) 1923

Autochthonous Kala-Azar in Four Children at Marseilles. d'Astros, P. Giraud and J. Raybaud.—p. 114.
Sarcoma of Spleen in Girl Aged 12. F. Ladreyt.—p. 118.
*Cancer in Southern France. A. Rémond.—p. 119.
Obstetric Practices in Tunis. Dinguizli.—p. 120.
Smallpox Vaccine Made from Rabbits' Brains: Neurovaccine. A. Marie. p. 123.
Influence of Heterografts on Anaphylactic Shock. A. Kotzareff.—p. 126.
Systematic Education of the Public Against Mushroom Poisoning. L. Azoulay.—p. 129.

Cancer in Southwestern France.—Rémond's collective inquiry in the Toulouse district confirms the regular increase in the number of cases of cancer, and the larger numbers in the young, since 1918. There were only 2 cases under 20 in the 528 cases of 1919 and 1920 in which the age was specified; 2 under 20 in the 493 of 1921, but there were 3 under 10 and 15 between 10 and 20 of the 695 cases in 1922. In these last two years there were also 22 cases in persons between 20 and 30.

Néoplasmes, Paris

2: 145-192 (Aug.) 1923

*Heredity of Cancer. W. F. Wassink and C. P. W. van Raamsdonk.—p. 145.
*Secondary Cancer of Lung. Montel and Hauvuy.—p. 155.
*Radium Treatment of Rectal Cancer. C. Schmitt.—p. 166.

Heredity of Cancer.—This article is based on 258 cases of mammary cancer. In 76 of the cases, other members of their families had cancer, 30 families, with a total of 40 cases having cancer in the breast. The 76 with cancer in other members of the family had 62 relatives with cancer elsewhere than in the breast (including 31 men). Similar data from 274 cases of cancer of the uterus show 66 with cancer in other members of the families. The list included 24 cases of cancer of the uterus among the 42 women. The data of 247 cancers of the skin, 46 of the lips, 69 of the tongue, 89 of the mouth, and 110 of the larynx and pharynx are tabulated. They demonstrate beyond question a familial predisposition to cancer, site variable, in from 13 to 39 per cent. of these groups, and a predisposition on the part of a certain organ in from 9 to 39 per cent., with the exception of cancers of the lip. Local irritation superposed on the familial predisposition brings the familial incidence to 50 per cent. for cancer of the lip. The work issues from the Netherlands Cancer Research Institute, and cites Maud Slye's and Roger Williams' publications as confirming the importance of heredity and organic predisposition in malignant disease. Williams found heredity in 28.2 per cent. of 136 cases of mammary cancer; and in 19.7 per cent. of 142 cases of uterine cancer. The predisposition of the organ was 39 per cent. for the breast and 34 per cent. for the uterus. These figures are strikingly concordant with those given in the table here, 39 per cent. for the breast and 36 per cent. for the uterus. This same predisposition of one organ is evident in statistics published in various countries, as in Manichon's family with 69 cancer cases of which 57 were in the stomach; Korteweg's mother, daughter and grandchild with mammary cancer; Paget's family with cancer of the uterus, and Warren's with cancer of the penis in three successive generations. By calculating the presumable incidence in a predisposed family, the results work out about the

same as if heredity alone were responsible for the incidence. Maud Slye's research has apparently determined that cancer heredity is a recessive quality. Consequently we will always find less evidences of heredity than actually exist.

Secondary Cancer of the Lung.—In the case described, a sarcoma of the thigh had been developing for four or five months without attracting attention when suddenly dyspnea from a hemorrhagic purulent pleural effusion from metastasis in lungs and pleura proved rapidly fatal. The diagnosis was made from cancer cells in sputum and puncture fluid. The latter contained streptococci and other micro-organisms, and a mouse inoculated with the fluid died within twenty-four hours.

Radium Treatment of Rectal Cancer.—Schmitt remarks that the same reasons which contraindicate surgical measures demand gentleness in the application of radium treatment. He describes with illustrations the technic which, he says, accomplishes most with least trauma of the region, and least danger of causing metastasis.

Presse Médicale, Paris

31: 669-680 (Aug. 1) 1923

*Puerperal Eclampsia. Lévy-Solal and A. Tzanck.—p. 669.
Insufficiency of the Heart with Chronic Lesions in the Lungs. R. Lutembacher.—p. 671.

Puerperal Eclampsia.—The blood serum from women with eclampsia, injected into the hearts of guinea-pigs, in doses of 1 or 2 c.c. per kilogram, always killed the animals, while normal human or animal serum was borne without harm in doses six or eight times larger. Lévy-Solal and Tzanck found further that two toxic elements can be isolated from the serum of eclampsia patients. One induces a slow, torpid kind of intoxication, the other, a sudden, rapidly fatal syndrome, with convulsions and features suggesting an anaphylactic shock. This conception of eclampsia as an anaphylactic shock was confirmed by their successful prevention of the experimental convulsions by injecting the animals beforehand with a minute dose of the same eclampsia serum. This realized a specific desensitization, in accordance with Besredka's theory, so that the attack of convulsions was often warded off. They also succeeded in saving 80 per cent. of the animals by mixing 1 mg. of pilocarpin hydrochlorid with the eclampsia serum. The animals had no convulsions, and soon recovered. On this basis they injected 5 mg. of pilocarpin hydrochlorid, in an eclampsia patient. The woman was at the seventh month, and had had nine convulsions. They did not return after the injection; this small dose was repeated three times in twenty-four hours. The aim was to modify the vagus-sympathetic tonus, and this seemed to have been accomplished.

31: 681-688 (Aug. 4) 1923

*Serotherapy of Pseudarthrosis. L. Imbert.—p. 681.
The Oculocardiac Reflex in Asthma. R. Castelnau.—p. 682.
Rehabilitation of Squill. L. Cheinisse.—p. 684.

Serotherapy of Pseudarthrosis.—Imbert reports four cases which seem to establish that pseudarthrosis can sometimes be effectually modified and started on the road to healing by subcutaneous injection of serum from the blood of a donor who has had a fracture which is healing well, at about the thirtieth day.

31: 689-696 (Aug. 8) 1923

*Tests of Kidney Functioning. Vaquez and Saragea.—p. 689.
The Function of the Spleen. P. Chevallier.—p. 691.

Tests of Kidney Function in Hypertension.—Vaquez expatiates on the advantages of the induced diuresis test as the simplest and most dependable means for estimating the functional capacity of the kidneys. It is as sensitive and as reliable for prognosis as any other test, while it discriminates between cardiac and renal disturbances. He tabulates the findings in twenty-eight cases of extreme hypertension. The habitual renal function is recorded for two days, the patient drinking only 500 gm. of water at meals and none between, and reclining the second day. The morning, day and night urines are collected separately. The third day, fasting, he drinks 600 gm. of Evian mineral water, and is up and about. The fourth day he drinks the same amount, but stays in bed. The findings are said to harmonize exactly with those of other tests, while avoiding their drawbacks.

31: 697-704 (Aug. 11) 1923

*Nourishment of the Bones. G. Mouriquand, P. Michel and R. Sanyas.—p. 697.
The Respiratory Output with the Pech Mask. J. Beyne.—p. 698.

Adjuvants and Antagonists for the Nourishment of Bone Tissue.—The extensive experimental research reported suggests that in all disturbances in the bones, of noninfectious origin, search should be made for some contributing or causal factor in the diet.

Revue de Médecine, Paris

40: 321-384 (June) 1923

Pathogenesis of Erythema Nodosum. E. Ledoux.—p. 321.
The Physiopathologic Mechanism of the Nitritoid Crisis. Juster and Balalian.—p. 354.

Revue Médicale de la Suisse Romande, Geneva

43: 337-416 (June) 1923

The Surgical Diagnosis from Medicolegal Standpoint. Reinbold.—p. 337.
*Action of Heat on Digitalis. M. Brot.—p. 350.
*Blood-Producing System in Tuberculosis. G. Bickel.—p. 357.
Treatment of Paralysis by Dead Tendon Grafting. G. L. Regard.—p. 364.
Modern Prophylaxis and Treatment of Diphtheria. Gautier.—p. 375.

Action of Heat on Digitalis.—Brot reports two series of tests with digitalis of the 1922 crop which demonstrated that addition of alcohol, far from rendering the drug more active, reduced its action materially. The minimal amount arresting the frog heart was 140 c.c. of the aqueous extract; 176 c.c. of the alcohol extract, and 245 c.c. after heating the aqueous extract for thirty minutes. The digitalis thus lost 43 per cent. of its potency by heating in an aqueous extract, and 16 per cent. from treatment with alcohol. It seems evident that the drug loses its potency least in pulverized form. Similar tests of adonis vernalis showed that the active principle is damaged by heat. Wide variation in the potency of different specimens of the drug from different crops was demonstrated, showing the effect of ageing. These differences may explain the conflicting reports on adonis by various writers.

Lymphocytosis in Tuberculosis.—Bickel recalls that lymphocytosis is usually a sign that the organism is opposing considerable resistance to invasion with tuberculosis, but in a case described the blood-forming apparatus seemed to be completely paralyzed. The deficit was slight for the polymorphonuclear leukocytes but extreme for erythrocytes, and the deficit in lymphocytes was even more pronounced. The anemia became extreme in the woman, aged 37, and enlarged mediastinal and mesenteric glands could be palpated. Under treatment with an arsenical preparation the blood count returned rapidly to normal as the general health improved, with final complete recovery.

Schweizerische medizinische Wochenschrift, Basel

53: 701-724 (July 26) 1923

First Case of Creeping Disease in Man in Switzerland. G. Galli-Valerio and M. de Werra.—p. 701.
Keratitis from Occupational Injury from Gases. P. Knapp.—p. 702.
*The Goiter Question. O. Bayard.—p. 703. Conc'n, p. 732.
Intra-Abdominal Hemorrhage from Corpus Luteum. M. Kranzfeld.—p. 707.
Hemoclastic Crisis in Epidemic Encephalitis. Mercio Xavier.—p. 709.

The Goiter Question.—Bayard discusses the changes in the thyroid with increasing age and with varying supply of iodin. Endemic goiter is a hyperplasia of the thyroid induced by lack of the normal supply of iodin. It is characterized histologically by the early and pronounced changes which otherwise are not observed in the thyroid till much later in life. The secretion suffers from the substandard functioning of the parenchyma. Besides cretinism and deafmutism, the thyroid insufficiency is liable to entail a predisposition to cancer. Senility and myxedema have so many points in common that myxedema has been defined as "premature senescence," and senility as "intensified myxedema." Figures have been published showing that the average weight of the thyroid at the ages of 6 to 10 is 18.58 gm. at Berne; 11.9 gm. at Munich, and 7.4 gm. at Kiel. The corresponding figures for cancer mortality per hundred thousand inhabitants, in the year 1900, were: Berne, 132; Munich, 98, and Kiel, 57. When malignant disease develops in the thyroid, there is always a history of preceding goiter; the prematurely aged organ seems

to invite cancer. Years of research have convinced Bayard that addition of 20 mg. of potassium iodid (15 mg. iodin) to each 5 kg. of table salt (a year's consumption, averaging 13.7 gm. a day) is ample to prevent development of goiter, and to cause the retrogression in school children of visible goiter. Five families were given salt with varying iodin content, 2, 4, 6, 8 or 10 cg. of potassium iodid in each 5 kg. of salt. The families were all photographed before and after five months' use of the iodized salt. All showed retrogression of the numerous goiters, but this was as pronounced with the smallest amounts as with the larger, even in the adults. These and other tests showed that even the largest amounts were well borne, without disagreeable by-effects. In conclusion he urges that the use of iodized salt should not be left optional. A law should be passed that the salt on the market must contain 0.5 mg. of potassium iodid per kilogram at first, gradually increasing the iodid content to 2 mg. per kilogram.

Policlinico, Rome

30: 389-440 (Aug. 15) 1923. Surgical Section

*Duodenal Ulcer. P. Bastianelli.—p. 389.
Radiography of Gallstones. A. Bianchini.—p. 400.
*Kidney Tumors. G. Carisi.—p. 411.
*Cancer of the Pancreas. G. Pisanò.—p. 426.

Duodenal Ulcers.—Bastianelli urges that clinicians should call the surgeon in consultation much earlier than is now the rule. After the operation, the clinician should keep the case under supervision far longer than is customary. He says that any one who has had a duodenal ulcer is still diseased, and with a Damocles' sword suspended over his head. He has operated for gastric ulcer in thirty-one and for duodenal ulcer in seventeen cases, and has never had a peptic ulcer develop afterward or the tumor return. He supplements the gastroenterostomy with exclusion of the pylorus, suturing with silk. The normal size of the stomach testifies in favor of a duodenal rather than a gastric site for the ulcer.

Kidney Tumors.—Carisi analyzes eight operative cases of tumors in the kidney, with recovery of all but one patient who had a cancer in both throat and kidney. Hematuria was present in all but one of the six adults but not in the two children. Two of the three hypernephroma cases presented the classic triad of pain, hematuria and tumor, but in one case a very large hypernephroma had developed silently; the man, aged 39, had consulted the physician only on account of transient jaundice. One child is now apparently in the best of health nearly two years after removal of an adenocarcinoma of the kidney at the age of 20 months, followed by roentgen exposures of the region. In the other child, aged 3, the sarcoma recurred in a year in an inoperable form.

Cancer in the Pancreas.—In one of the two cases described, the possibility of a cancer in the pancreas had been discussed and excluded, as the symptoms seemed to indicate that the tumor was in the kidney. Even with all modern diagnostic measures, pancreas disease still has a grave prognosis owing to the advanced stage of the lesions when the diagnosis is made. Other diagnostic measures must be found, as an early operation would have every chance of a complete cure.

Brazil-Medico, Rio de Janeiro

2: 53-68 (July 28) 1923

*Protein Therapy in Ophthalmology. Gabriel de Andrade.—p. 53.
Traumatic Hydrops of Antrum of Highmore. Alvaro Tourinho.—p. 60.
*Production of Antitoxic Serums in Large Animals. R. Kraus.—p. 61.

Protein Therapy in Ophthalmology.—De Andrade reports some cases of postoperative iridocyclitis, three cases of severe gonococcus conjunctivitis and cases of other ocular lesions in all of which prompt recovery followed parenteral injection of 8 or 10 c.c. of freshly drawn milk, boiled only for three or four minutes. The intramuscular injection was repeated the following day and again after a pause of two or three days. The results were always highly gratifying, whether there was a febrile reaction or not. He usually combines it with the ordinary local measures, but in one of these cases, under the protein therapy alone, the pain from the gonococcus conjunctivitis subsided completely, three hours after the first injection, and the urethritis and an old suppurating otitis media promptly healed at the same time. The effect is generally produced by the second injection. He never made more than eight injections, and never witnessed any untoward by-effects, except in one case in which the needle had evidently entered a vessel.

Production of Antiserums in Large Animals.—Attenuation of tetanus toxin with formaldehyd yields toxoids which can be used in production of antitoxins, but Kraus warns that the potency as an antigen is liable to be impaired. He also presents evidence that beginning with small progressive doses gives a larger yield of antitoxin units than can be obtained when large doses are used from the first.

Archiv für Verdauungs-Krankheiten, Berlin

31: 253-374 (July) 1923

*Bilirubin and Liver Function. G. Felsenreich and O. Satke.—p. 253.
Chemical and Clinical Study of Plastein. E. Hesse.—p. 275.
Serologic Study of Digestion of Fat. E. Levinger.—p. 285.
*Retention Stomach Tube. K. Diehl.—p. 293.
*Titration of Hydrochloric Acid. G. Kelling.—p. 307.
*Symptoms of Duodenal Ulcer. J. Dillon.—p. 313.
*Gastric Ulcer Visible in Roentgenogram. J. Büscher.—p. 327.
*Predisposition to Gastric Ulcer. R. Tscherning.—p. 351.
Importance of Hematoporphyrin in Dubious Cases of Occult Blood in Stools. W. Löwenberg.—p. 361.
Esophageal Cancer Close to Old Lipomatous Polyp. Schirmer.—p. 365.
Esophageal Cancer in Old Cicatrix. Idem.—p. 370.
Research on Means to Influence Secretion of Bile. S. Okada.—p. 373.
Reply. G. Singer.—p. 374.

Bilirubin as Index of Liver Functional Capacity.—Felsenreich and Satke compared the findings in regard to bilirubin and its derivatives in serum, duodenal juice, stool and urine, in thirty-eight cases of simple jaundice. Abnormally high urobilinogenuria is a sign of injury of the liver, as also normal urobilinogenuria when the bile is deficient in salts and pigments. The degree of the liver impairment can be estimated by comparing the urobilinogenuria and the elimination of bilirubin in the bile from the duodenum.

Research with Continuous Aspiration from the Stomach.—Diehl's research on twenty-two persons with healthy stomachs and a stomach tube left continuously in the stomach has revealed, among other things, that abnormally high hydrogen ion concentration can occur. His findings conflict in certain points with those of others who examined only pathologic stomachs.

Titration of Hydrochloric Acid.—Kelling states that Dresden water contains lime to a 9 or 10 degree of hardness. The stomach content is diluted with this water after an Ewald-Boas test meal, and the color reaction from the hydrolytic splitting of the albumin and hydrochloric acid compounds gives a fairly accurate idea of the proportion of free and albumin-bound hydrochloric acid present.

Symptomatology of Duodenal Ulcer.—Dillon's experience with 64 cases of duodenal ulcer tends to sustain the assertion that lack of appetite rather testifies against duodenal ulcer. The appetite was excellent in 81.5 per cent. of his duodenal ulcer cases, and in 68 per cent. of the gastric ulcers. Intestinal bleeding was evident in 25 per cent. of the duodenal ulcer cases but only in 8.5 of the gastric cases. He does not ascribe any importance to occult blood, saying that he found traces of blood after introducing the stomach tube in 7 of 15 persons with healthy stomachs and the stools free from occult blood. He cites further Kuttner's 9 cases and others in which, after fatal hemorrhage from the stomach, the gastric mucosa was found absolutely normal, even under the microscope. He insists that the course of a duodenal and of a gastric ulcer differ so essentially that the treatment of each requires revision.

Treatment of Gastric Ulcer.—Büscher was formerly assistant at the Erlangen medical clinic, and his article is based on roentgen-ray examination of 345 women and 298 men—all with gastric ulcer casting a shadow under the roentgen rays. In 14.4 per cent. the patients were over 60. The old rule "Long duration of the disturbances speaks for ulcer, short duration, in the elderly, for cancer" is a good guide, especially a history of recurring periods of stomach disturbances. The subsidence of all symptoms is no criterion of the healing of an ulcer. Pregnancy does not seem to rouse a latent ulcer; this seems to be connected more with hormonal waves, especially in the spring. Only one instance of a tuberculous gastric ulcer was found in operating. Familial predisposition was

manifest in some cases. In one family a professor, his sister and a cousin required operative treatment for gastric ulcer, and the grandfather had had stomach disturbances. In the total 643 cases there was only one child and one youth. With severe pain radiating to the nipple, an ulcer close to the pylorus was always found. Hunger pain was observed with both gastric and duodenal ulcers; daily recurrence is instructive, as also the relative bearableness of the pains in comparison with gallbladder pains. The latter are sometimes compared to labor pains, as also the pains with stenosis of the pylorus. Tenderness of vertebrae was never observed, but Boas' tender point was found in 25 per cent. The vomiting with bile-duct disease generally occurs from a fasting stomach. A gastric or duodenal ulcer may run its course without vomiting. When it occurs, there is usually obstruction of the pylorus or an organic hour-glass stomach. With hypersecretion and hyperacidity, obstinate constipation is frequent, but subsides after removal of the ulcer. Patients frequently ascribe to the stomach the disturbances from remote lesions; kidney calculi in one case. A tender point moving with the stomach is instructive. Of 173 patients treated by operative measures ten years or more ago, 3 of the 21 treated by gastro-enterostomy required resection later; 2 died from gastric cancer. The ulcer recurred in 3 of the 4 treated by excision, as also in 6 of the 126 with circular resection. The Krönlein operation, resecting the distal end of the stomach, suturing to the stump a loop of small intestine, was applied in 16 cases and has given the most constantly favorable results to date, but the interval since has been less, not over four years; no instance of recurrence is known. After the Billroth II, some of the 6 patients still complain of some disturbance, and recurrence has been observed.

Physical and Mental Constitutional Predisposition to Gastric Ulcer.—Tscherning admits that not all gastric ulcers fit into his frame, but it includes the overwhelming majority. The main type is tall, slender, with a blending of asthenic and athletic elements, vasomotor instability and, in a large proportion, endocrine-genital anomalies tending to the eunuchoid type. The persons examined were all men under social insurance, and he tabulates the body measurements by the averages for the group. Decided vagotonia or sympatheticotonia was never observed. There were only two instances of another gastric ulcer in the family.

Deutsche Zeitschrift für Chirurgie, Leipzig

180: 1-200 (June) 1923

Operative Treatment of Gallstones. Ringel and Kleinschmidt.—p. 1.
*Phlegmon in Ascending Colon. H. Sauer.—p. 27.
*Splenectomy in Blood Diseases. R. Vogel.—p. 37.
*Prolapse of Rectum in Children. E. Weber.—p. 107.
Unusual Forms of Peritonitis. E. Weber.—p. 113.
*Tuberculosis of Male Gonads. R. Reinecke.—p. 130.
Successes with Albee's Operation. E. Gnant.—p. 158.
*Cervical Sympathetic and the Thyroid. W. Reinhard.—p. 170. Also p. 177.

Phlegmon in Ascending Colon.—The streptococcus phlegmon developed secondary to an inflammatory tumor for which the trichocephalus was responsible. The youth, aged 16, died seven hours after removal of the loop involved. The first symptoms had been noticed seven days before. Sauer has been able to find records of only forty cases of phlegmon in the bowel, and this is the only case of which he knows traceable to the trichocephalus. He suggests that possibly helminths may be often responsible for chronic inflammatory tumors in the intestines.

Splenectomy in Blood Diseases.—Vogel reviews this entire field comparing personal experiences at Hamburg with the literature on the physiology, on hemolytic jaundice, Banti's disease, Gaucher's disease, pernicious and pseudoleukemic anemia, leukemia, purpura, isolated tuberculosis of the spleen, and hypertrophy of the spleen in malaria, syphilis, sepsis and infectious diseases. He gives the tabulated details from a number of personal cases before and long after splenectomy, and describes the clinical picture in each type of blood disease, the indications for splenectomy, and the probable outcome. He comments on the surprising fact that the resisting power of the erythrocytes in hemolytic jaundice is not modified by the splenectomy, although the disease is clinically cured by it. In pernicious anemia, the beneficial effect is transient, but it demonstrates that splenectomy has a stimulating influence on the bone marrow. Splenectomy induces an almost clinical cure in Werlhof's disease, but the number of blood platelets is not modified; injury of the walls of the blood vessels, rather than the lack of platelets, is the main factor. One practical conclusion from his research is the necessity for removal of the enlarged spleen in endocarditis lenta, as soon as this disease is diagnosed. In lymphatic leukemia, removal of the overlarge spleen is only a palliative operation, and it is contraindicated in case of a hemorrhagic diathesis, and when the spleen is bound down by adhesions. In one case of pseudoleukemic anemia in an infant of 18 months, no effect from splenectomy was apparent beyond the subsidence of the relative lymphocytosis, but polycythemia was evident a year later, and the general health was good.

Prolapse of Rectum in Children.—Weber reports recurrence of the prolapse in 6 per cent. of 34 children treated by colopexy, and in 27.3 per cent. of the 44 cases treated by running a silver wire around the anus. The outcome is not known in 17 and 44 other cases in these two groups. The intervals since average four years. The two recurrences in the colopexy cases occurred at once after the operation. No by-effects from the colopexy were observed in any of the total 51 cases. The sigmoid loop was fastened to the peritoneum of the left anterior wall of the abdomen with silk button sutures, including the musculature of the wall in the sutures, separating the fibers lengthwise for this.

Tuberculosis of Male Genital Organs.—Reinecke denounces castration alone as not an adequate treatment for tuberculous epididymitis. At necropsy of eleven men thus treated by unilateral castration, and another treated by bilateral castration, the intra-abdominal genital organs were always found involved, and without a trace of tendency to healing. On the other hand, two patients treated by removing the seminal vesicles in addition seem to be entirely cured, in the best of health over three years later. In one, a unilateral radical operation had been done; in the other case, the operation on the other side followed six months later. He has applied this radical operation in eleven cases, and advocates it as the only logical procedure. It should be followed by tuberculin and heliotherapy.

Innervation of the Thyroid.—Reinhard experimented on dogs to determine the relations between the cervical sympathetic and the thyroid. His photomicrographs demonstrate that chronic irritation of one cervical sympathetic induced hypertrophy of the corresponding lobe of the thyroid. Total extirpation of the cervical sympathetic on one side was followed by a reduction in the size of the corresponding lobe of the thyroid, and reduced colloid content.

Sympathectomy in Treatment of Exophthalmic Goiter.—Reinhard's charts and tables showing the anatomic bases and the results in eight cases apparently justify his claim that the logical, harmless and effective treatment of exophthalmic goiter is by resecting the superior and middle ganglions of the cervical sympathetic, and total extirpation of the cervical trunk. The only by-effect was transient lacrimation and transient congestion of the conjunctiva on that side. The exophthalmos, motor restlessness and palpitation of the heart showed pronounced improvement at once, and this was followed by gradual subsidence of all the symptoms to a complete cure. His experimental and clinical experiences, he adds, cannot fail to convince the most skeptical that the cervical sympathetic is especially responsible for the pathogenesis of exophthalmic goiter, as he explains in detail.

Jahrbuch für Kinderheilkunde, Berlin

52: 1-128 (May) 1923

Congenital Tricuspid Insufficiency. A. Hotz.—p. 1.
*Percussion of Children's Skulls. H. Koeppe.—p. 13.
*Nutritional Disturbances in Infants. E. Schiff and J. Caspari.—p. 53.
*Colloids of the Blood in Tuberculous Infants. J. Duzar.—p. 69.
*Calcium in Blood in Fatal Disease. G. Genck and K. Blühdorn.—p. 83.
*Digestion in Infants. K. Scheer and F. Müller.—p. 93.

Percussion of the Skull in Children.—Koeppe, in 1907, first found tympany and the cracked-pot sound, on percussion, in a boy, aged 11, with brain tumor, and then in four children

with choked disk. Subsequent study showed that tympany and cracked-pot sounds cannot be produced after death, but section proved that they are not always due to air in the cranium. In eighty-five of 100 children tested for these sounds they were positive, and lumbar puncture showed an intracranial pressure of 190-300 mm. of water. They were found in healthy infants, on percussion (tympany being normal in the second to third years), in ten children with pathologic conditions of the fundus oculi, in eight with hydrocephalus, and in various diseases in different intensity, the degree in some instances varying from day to day. Skull sounds alone indicate only increased intracranial pressure and they are not pathognomonic of any particular disease. In connection with a positive Pirquet reaction and other signs of tuberculosis, they aid in the early diagnosis of tuberculous meningitis.

Pathogenesis of Digestive Disturbances of Infants.—Schiff and Caspari, investigating the share of the colon bacillus in the pathogenesis of acute digestive disturbances in infants, found that these bacilli split albumin bodies and also peptone, with formation of basic products. Nutrient media to which products of peptic digestion were added gave an acid reaction, while the reaction was alkaline when products of trypsin digestion had been added. Bacterial fermentation of glucose is stronger with trypsin than with peptic digestion. They describe other chemical actions of the colon bacillus, especially its influence on proteins and fats and the higher fatty acids under varying conditions.

The Colloidal Blood Test in Infantile Tuberculosis.—Duzar made the colloid flocculation test of the blood, according to the Darányi method, in nineteen healthy children, in five with nontuberculous febrile diseases and twenty-six tuberculous infants. The reaction in all the healthy infants was constantly negative, and in the tuberculous infants constantly positive, and it increased in intensity parallel with the pathologic process. One infant, aged 6 months, in whom all tests for tuberculosis had been negative, gave a positive colloid lability reaction, and necropsy showed the hilum infiltrated with cheesy nodules. He obtained transiently positive reactions, also, in an infant, aged 11 months, with diffuse bronchitis since birth, in whom tuberculin tests had been negative. Here section showed no tuberculosis, but bronchiectasis with putrid bronchitis and active pneumonic foci. He recommends this colloid instability test as a useful aid in diagnosis when the tuberculin reaction and other tests give dubious findings. The Darányi test is made with 0.2 c.c. of the serum to be examined, added to 1.1 c.c. of 96 per cent. alcohol diluted with 2 per cent. sodium chlorid solution (4.1 c.c. of the saline solution to each 1 c.c. of the alcohol). The mixture is well shaken and heated in the water bath at 60 C. for twenty minutes. The tubes are then kept slanting at room temperature against a dark background, and are inspected without disturbing. When flocculation occurs at the half or first hour, this is a four plus reaction. The negative reaction is recorded at the twenty-fourth hour if no flocculation has occurred. It is important to titrate the alcohol dilution each time with control serums.

Calcium Content of the Blood and Spinal Fluid in Fatal Diseases of Infants and Children.—Genck and Blühdorn in one case found the postmortem calcium content of the heart blood to be eighty times normal. The calcium content in one case two hours before death was only half that of the postmortem, and in one the calcium content of 5.6-6.2 in the fluid from puncture of the ventricle increased to 110 mg. per cent. after death. Among the cases showing this great calcium increase were three cases of toxicoses, with increasing hyperacidity which ended in sepsis: one meningitis, one pneumococcus sepsis and one hydrocephalus in which stupor had preceded death. The death struggle had been unusually protracted in all. The postmortem calcium content in lung affections was normal in the majority.

Physiology and Pathology of Digestion in Infants.—Scheer and Müller show tables of various kinds of experiments in feeding twenty-six infants, with tests of the feces. They say that, assuming the degree of acidity and time in the intestine to be constant, the question is resolved to the relation between the quantity of the fermentable material and the buffer capacity of the chyme. When carbohydrate is too abundant in the intestine, the acidity increases during the fermentation until the bacteria necessary for splitting albumin cannot exist and acid stools result. When the quantity of carbohydrate in relation to the buffer potency is small, the acidity does not increase, splitting of albumin takes place, acidity decreases, and alkaline stools result. Use of sugar increases the formerly slight albumin decomposition. Acid stools evacuated before fermentation is completed increase in acidity for some hours. Evacuated during the second stage of the process, the stools are alkaline and do not become acid. Increased content of sugar difficult to absorb prolongs, while increased buffer potency (in the form of albumin, and salts, especially phosphates) shortens fermentation. The first condition causes acid and the second alkaline stools. Calomel, stimulating peristalsis, yields acid stools, while opium, retarding the peristalsis, yields alkaline stools.

Monatsschrift für Kinderheilkunde, Leipzig

26: 321-432 (July) 1923

*Vitamins and Calcium and Phosphorus Balance. P. Rupprecht.—p. 321.
*Atropin, Pilocarpin and Gastric Motor Function. M. Löwy and O. Tezner.—p. 378.
Technic and Aims in Mixed Infant Feeding. M. Schmalfuss.—p. 387.
*Bacteriophagy in Infants' Stools. L. Suranyi and E. Kramár.—p. 392.
*The Wildbolz Urine Reaction in Tuberculosis. W. Marcus.—p. 401.
*Prophylaxis of Whooping Cough. E. Stransky.—p. 410.

Influence of Vitamins on the Calcium and Phosphorus Balance, and Their Mutual Relations.—Rupprecht does not theorize but presents a long series of tests on infants with rachitis and other disorders, tabulating the metabolic findings over long periods. He was able to demonstrate that carrot juice, cod liver oil and extract of skimmed milk induced retention of calcium. Butter did not display this property, and carrot juice lost it on heating to 130 C. but in cod liver oil this property seemed to be heat-stable.

Influence of Atropin and Pilocarpin on Motor Function of Healthy Child Stomach.—Löwy and Tezner examined with the roentgen rays the behavior of the stomach in eighty-five children between 5 and 14 after subcutaneous injection of atropin or pilocarpin. Atropin retarded the evacuation of the stomach in every case when 2 mg. was given. Pilocarpin retarded it in 50 per cent.

Bacteriophagy in Infants' Stools.—Suranyi and Kramár examined fifty filtrates of stools from infants between 2 and 18 months old, sick or well. Fifty-two different strains of bacteria were used in the tests. A pronounced bacteriophagic lytic action was manifest in 46 per cent. The strongest lytic action was in stools from healthy infants. Bacteriophagy was noted in only 14.2 per cent. of the cases of the exudative diathesis, but in 56.7 per cent. of the healthy, mostly between 6 and 12 months of age. The bacteriophagy did not seem to have any connection with the kind of feeding. The lytic action was most pronounced with dysentery bacilli, next with colon bacilli. Members of the typhoid group were only exceptionally affected.

The Wildbolz Urine Reaction.—Marcus' tables of the findings in nearly 100 children show that the Wildbolz urine reaction is certainly specific, but that it does not distinguish between active and inactive processes.

Prophylaxis of Whooping Cough.—Stransky reports that the box system for the infants in his institution answered the purpose of preventing the spread of whooping cough in a ward containing six boxes with glass walls and five beds each. The imported pertussis was not recognized until eleven infants had contracted it. The course could be traced from child to child, but once recognized and close contact prevented, there were no further cases.

Münchener medizinische Wochenschrift, Munich

70: 865-898 (July 6) 1923

*Decoloration of Hemoglobin. F. Müller.—p. 865.
*Defensive Processes in Tissue Cells. F. Sauerbruch.—p. 866.
*Modification of Streptococci. R. Schnitzer and F. Pulvermacher.—p. 866.
*Medical Supervision of Printers. L. Schwarz.—p. 868.
*Reaction in Blood of the New-Born. K. v. Oettingen.—p. 869.
Albumin Content of Spinal Fluid at Different Levels. Jacobi.—p. 870.
Serologic Research in Dermatology. A. Memmesheimer.—p. 872.
*Signs of Meningism After Infections. J. Schwab.—p. 872.
The Tonsils in Tuberculosis. P. Fischer.—p. 873.
Congenital Ankylosis of Finger Joints. Brügger.—p. 874.

A Malpractice Suit in 1911. A. Döderlein.—p. 875.
*Technic for Intraspinal Arsphenamin Treatment. E. v. Thurzó.—p. 876.
Water-Glass to Fasten Microscopic Sections. F. Windholz.—p. 877.
Foreign Body in Rectum. K. Wisotzki.—p. 878.
Torsion of Ovarian Tumor in Child. J. P. zum Busch.—p. 878.
Neuritis and Polyneuritis in General Practice. H. Curschmann.—p. 881.
Heredity from Standpoint of School Medical Inspection. Welde.—p. 883.
Advantages of Advice Stations for Venereal Disease. L. Görl.—p. 885.

Decoloration of Hemoglobin by Leukocytes, Spleen and Liver Cells.—Müller traces the history of the assumption that the spleen is involved in the transformation of hemoglobin.

Defensive Processes in Cells.—Sauerbruch protests against the view that immunity processes and defensive reactions are restricted to the blood serum. His experiments with animals in parabiosis have shown an increase in the function and a hyperplasia of the mesenchymal cells which he regards as highly significant. He is inclined to accept the mesenchyma as the determining element for the constitution.

Modification of Streptococci.—The viridans changed to the hemolytic type, among other modifications, in the bacteriologic research reported.

Medical Supervision of Printing Establishments.—Schwarz examined for signs of lead poisoning 135 workers from the composing rooms of three newspapers. No suggestion of lead absorption was discovered in the 33 engaged in stereotyping work, and only 3 of the 101 handling melted metal showed the lead line on the gums, but one in this group and 5 others had more than 100: 1,000,000 granulated erythrocytes, and he and 17 others had the characteristic porphyrinuria. Those handling melted metal are thus the ones most endangered.

Reaction in Blood of the Newly Born.—Oettingen found that the plasm of the new-born infant behaves entirely opposite to the mother's plasm in the response to the silver bromid, light sensitizing test.

Meningism Persisting After Infections.—Schwab discusses the headache, depression, nervous irritability and loss of appetite which so often follow for months or years an attack of bronchitis, influenza or even coryza in older children. In ten boys and seven girls presenting this persistent meningism, the Kernig sign was positive in all. Lumbar puncture in eleven of the children showed albumin and sugar constantly in the fluid, and lymphocytosis in ten, ranging from 1 to 966 lymphocytes. In the recent cases he ordered the child kept in bed, often for weeks.

Treatment of Neurosyphilis.—Thurzó injects air by lumbar puncture the day before he gives the intravenous injection of the arsphenamin preparation in treatment of neurosyphilis. This preliminary irritation of the meninges prepares them better, he thinks, for the action of the drug.

70: 1005-1040 (Aug. 3) 1923

*The Arndt-Schulz Law. F. Martius.—p. 1005.
*Delay in the Effect from a Stimulus. A. Bier.—p. 1006.
The Question of Dosage. M. Cloetta.—p. 1010.
*Sloughing of Entire Lung. F. Sauerbruch.—p. 1011.
*Artificial Pneumothorax. W. Jehn.—p. 1012.
*Serodiagnosis of Ocular Tuberculosis. Römer and K. vom Hofe.—p. 1014.
*Blister Test for Sugar. M. Gänsslen.—p. 1015.
*Meningitis Symptoms in Epidemic Encephalitis. H. E. Lorenz.—p. 1018.
*Prophylaxis of Typhus. E. Grahe.—p. 1020.
Beware of Term "Evident Impossibility" in Expert Testimony. W. Zangemeister and F. Leonhard.—p. 1021.
*Functional Versus Organic Hypertension. L. Roemheld.—p. 1022.
Mechanism of Tortuous Winding of Arteries. A. Winkler.—p. 1023.
General Principles for Treatment of Fractures. E. Lexer.—p. 1024.

The Arndt-Schulz Law.—Martius extols the importance of this law, as a tribute to Schulz on his seventieth birthday. According to this law, every drug has a stimulating action in small doses, while larger doses inhibit, and much larger doses kill.

Interval Between Application and Appreciable Manifestations of Action of Stimulus.—Bier remarks that this delay before the effect becomes apparent has an importance for biology and therapeutics which had been overlooked until attention was called to this unsuspected hidden activity by the burns and ulcers that developed long after an apparently harmless roentgen-ray exposure. Phosphorus is another instance of this tardiness in the apparent effect. The phosphorus necrosis may not develop until years after cessation of work with phosphorus. A carious tooth or trauma then may be occasion for its development. The effect of a course of spa treatment may not become apparent until after the return home. The reaction after injection of formic acid may take weeks before it becomes manifest, but the phenomena of fertilization of animals and plants offer the most striking examples of this retarded action of the stimulating substance. He regards this retarded action as a phenomenon common to all stimuli. By study of it we can learn how to break some link in the chain and thus ward off the impending damage, or by interposing new links induce benefit otherwise unattainable.

Necrosis of Lung.—Sauerbruch reports the apparently complete clinical recovery of a young woman who had a ganglioneuroma, 8 by 12 by 17 cm., removed from the posterior mediastinum. The lungs seemed normal, but suppuration followed, and the entire left lung was expelled in sequestrums, the largest 4 by 8 by 12 cm. The debilitating empyema required thoracoplasty, and the bony framework of practically the entire left half of the chest was removed. He does not know of any similar instance of the casting off of the entire sound lung. Its circulation was impaired at the operation; several branches of the bronchial arteries had been ligated. No bronchial fistula developed, and the patient now, nine months later, is in excellent health, with only a small fistula at the lowest point of the operative wound. Sauerbruch comments that this case is very instructive and encouraging from several standpoints.

Artificial Pneumothorax.—Jehn protests against the present tendency to extend the field of artificial pneumothorax, saying that often valuable time is wasted on it, blocking the more effective thoracoplasty.

Tuberculin Tests in Tuberculosis of the Eyes.—Römer and vom Hofe remark that the prognosis with "scrofulous" eye affections is more favorable than with most intra-ocular tuberculous lesions. The differential diagnosis is difficult, but they have found that the nature of the process can be determined by the difference in the reaction to simultaneous inoculation with tuberculin alone on one arm and with tuberculin, mixed with the patient's own serum, on the other arm. No attenuation of the tuberculin reaction from the dilution was manifest in the cases with graver lesions; the intensity of the reaction even seemed to be enhanced by the admixture of the active serum.

The Blister Test.—Gänsslen applies at night a plaster (2 by 3 cm.), or a row of such plasters at hour intervals, on the outer side of the leg or arm, and next day draws off the fluid and tests it for sugar. It is possible in this way to demonstrate the passage of sugar into the tissues and thence into the tissue fluid (blister fluid) after intravenous injection of the sugar. He tabulates averages from 300 readings in health and 100 in diabetics. In pancreas diabetes, the sugar content was found higher in the tissue fluid than in the blood, while the reverse was observed with mild, transient glycosuria. The tissue sugar content was abnormally low late in pregnancy, in grave exophthalmic goiter, and in wasting diseases.

Abnormal Spinal Fluid in Epidemic Encephalitis.—In six of twenty-five cases, Lorenz found the lumbar puncture fluid hemorrhagic and yellow. In one case there was a fine fibrin network. In this group the onset had been sudden, with vertigo or unconsciousness, passing into the typical lethargy. The meningitic symptoms misled the diagnosis at first.

Prophylaxis of Typhus.—Grahe describes the measures adopted in his large rural district under very primitive conditions. There were 82 cases of typhus in 67 homes, but in 58 of the homes, with a total of 276 inmates, the disease was restricted to a single case. Every one in the family was required to rub a small amount of mercurial ointment (about as much as a hempseed) into the hairy regions of the body every day for thirty days, and to wear a band around the neck, wrist and ankle which had been dipped in a compound solution of cresol and dried. Strips of paper and rags, dipped in the same, were spread around under beds, mattresses and wherever clothes and bed clothes were kept. Mercurial poi-

soning was never observed. In treatment he found useful a level tablespoonful of magnesium sulphate, three times a day, for two, three or four days from the start of the disease. A weak infusion of ipecac in a suspension of kaolin often regulated the bowel, and moist heat proved a useful adjuvant.

Differentiation of Functional and Organic Hypertension.—Roemheld says that the blood pressure in the morning, before rising or eating, gives the most reliable insight into the actual conditions in the circulation. If the pressure is found approximately normal, hypertension at other times is probably merely functional.

Geneeskundige Gids, The Hague

1: 149-174 (Aug. 3) 1923

*The Blood Pressure in the Pregnant. K. de Snoo.—p. 149.
Acute Pericarditis with Effusion. D. H. Klinkert.—p. 157.

The Blood Pressure in the Pregnant.—De Snoo declares that eclampsia practically never occurs without hypertension. Consequently, a rise in the blood pressure should warn of possibly impending eclampsia. He regards 130 mm. mercury as the limit of physiologic blood pressure. A pressure above this in the last months of the first pregnancy is a sign of beginning intoxication. If it goes above 150, the woman must stay in bed, with strict salt-free diet, and the danger of eclampsia thus is averted in previously healthy women. With menacing eclampsia, he allows nothing but water. Of the thousands of women tested, only one developed eclampsia of those with normal blood pressure on fortnightly reexamination. In this case, the pressure had been normal ten days before, and there were only two mild convulsions, and the traces of albumin in the urine had disappeared by the next day. In this one case the woman's weight had increased by 2 kg. at the last examination, ten days before the eclampsia developed. If this sudden increase in weight had been accepted as a warning, and the woman had been told to return in a week for a new examination, and restrict intake of salt in the interim, the eclampsia might have been warded off. Parturition itself is liable to raise the blood pressure, and thus aggravates conditions. When the blood pressure falls in the course of eclampsia, the convulsions cease, but the patient succumbs to heart failure unless the blood pressure is closely supervised and the weakening of the heart combated. Venesection with a falling blood pressure is as wrong as stimulants with a climbing blood pressure. Determination of the blood pressure in the pregnant is thus useful not only for diagnosis but as a guide to treatment, and for the prognosis.

Finska Läkaresällskapets Handlingar, Helsingfors

65: 297-398 (May-June) 1923

*Albee's Operation in Tuberculous Spondylitis. Langenskiöld.—p. 297.
*Chorio-Epithelioma. B. Nyström.—p. 306.
*Intestinal Perforation in Typhoid. T. Sandelin.—p. 323.
*Thyroid Influence on Pernicious Anemia. W. Kerppola.—p. 330.
*A Case of Parotid Cyst. P. E. A. Nylander.—p. 339.
Medical Use of Yeast Preparations. J. Grönberg.—p. 344.
*Blueberries in Treatment of Oxyuriasis. C. Nyberg.—p. 354.

Albee Operation in Tuberculous Spondylitis.—Langenskiöld, on the basis of his own 19, Faltin's 10 and the Maria Hospital's 5, Albee operations on patients aged from 14 to 50, says that the operation can replace plaster jackets and immobilization but not dietetic and hygienic measures. Adult patients can more readily receive air and sunlight treatment, and the majority are able to resume work in six months. Cervical spondylitis and extremely prouounced, solid kyphosis should be excluded from this operation, and gravity abscesses should be cured before it is performed. Slight pulmonary tuberculosis or fistulas, except those at the site of operation, constitute no contra-indication.

Chorio-Epithelioma.—Nyström describes three cases and suggests that the main factor is the abnormal tax on the endocrine glands during pregnancy. He indicates the infrequency of the disease in Finland by referring to Engström's six cases among 4,000 peritoneal operations, 1890-1916. Of Sunde's compilation of 38 patients, 45 per cent. had borne six or more children, while only 23 per cent. of the 56,397 women with normal pregnancies had given birth to so large a number of children. One of Nyström's three patients had passed through twelve, another eleven, and the third two pregnancies. He asks that in reporting cases, close attention be given not only to the growth itself and surrounding tissues but also to organs outside the affected region, especially to the endocrine system.

Intestinal Perforation in Typhoid.—Sandelin recommends operation as soon as palpation of the abdomen reveals tenderness and muscular tension with constant pain; even doubtful cases should be sent to the surgical ward. With early operation, Frank had 60 per cent. recoveries; Watson reported recovery in all cases operated on in from two to nine hours after perforation, and death in all in which intervention took place after more than twelve hours. Prognosis for women is better than for men, and it is good for children. In his patient, aged 40, the appendix had adhered to the intestine at the place of perforation and thus prevented the escape of feces into the abdominal cavity. "She owed her life probably to her appendix."

Connection Between Pernicious Anemia and the Thyroid.—Kerppola in reviewing the literature found 107 cases of pernicious anemia in which the thyroid was mentioned, but with enlargement only in three. Pernicious anemia is scarcely attributable to thyroid hyperfunction, and is only exceptionally connected with goiter. From the combination of pernicious anemia with myxedema, the appearance of myxedema in two cases of exophthalmic goiter after operative and roentgen reduction of the thyroid, and from the symptomatology of myxedema, which in many points resembles that of pernicious anemia, he advances the hypothesis that, at least in some cases, thyroid hypofunction plays a certain part. As increased thyroid function favors blood formation, he advises tentative administration of thyroid extract in pernicious anemia and even in simple anemia.

A Case of Parotid Cyst.—Nylander describes the case of a physician, aged 50. In the fall of 1920, a movable flat tumor the size of a pea appeared 0.5 cm. in front of the right ear. By 1922 this had become as large as a plum. It caused no pain except on pressure and was, at operation, found to be a unilocular cyst attached to the parotid gland. It contained a milklike fluid. The cyst was evidently of congenital origin.

Blueberries as Remedy for Oxyuriasis.—Nyberg, in 1921, had his attention directed to the effect of blueberries on helminthiasis. He found that some patients were freed from the helminths and there had been no recurrence during the year; in others the oxyuriasis returned, possibly through reinfection. In 1922 he treated all members of the families of his eleven patients with good results in all known instances. Large children and adults were told to eat 0.5 liter of fresh blueberries three or four times a day the first day, and for the next six days blueberries constituted one meal a day.

Norsk Magazin for Lægevidenskaben, Christiania

84: 521-608 (June) 1923

*Extrapleural Thoracoplasty in Lung Tuberculosis. F. Bull.—p. 521.
General Blastomycosis with Clinical Picture of Meningitis. J. A. Voss.—p. 550.
Sclerema Neonatorum. C. Johannessen.—p. 560.
Hydatid of Morgagni as Cause of Disease. N. Quisling.—p. 564.
*Intestinal Intussusception in Infants. G. Lützow-Holm.—p. 566.

Extrapleural Thoracoplasty in Tuberculosis of the Lungs.—Bull, during the period 1914-1922, performed this operation on 37 men and 38 women, with tubercle bacilli in the sputum in all cases except two who showed other signs of tuberculosis. He made the thoracoplasty 46 times on the left and 29 times on the right side, and presents tables of the results. Of 52 patients on whom the operation was made in two stages, 2 died; among 21 on whom it was completed at one sitting, 6 died. The sputum of 37 contained no tubercle bacilli on departure from hospital, and in 18 none were found on reexamination from one to eight years later. Of 64 patients observed from one to eight years after operation, 59 per cent. are still living, and 39 per cent. are free from symptoms; 9 have progressing tuberculosis and the condition of 4 is unknown. Of the 41 per cent. who have died, the deaths of 5 were attributable to the operation, 20 to tuberculosis and 1 to influenza. This operation during the above period has been

applied by 9 other Norwegian surgeons to 88 patients, with a mortality of 8 per cent. He devotes 24 pages to the tabulated details of his own 75 cases.

Intestinal Intussusception in Infants.—Lützow-Holm shows by collected statistics that in other countries invagination of the intestines is far more prevalent than in Norway, and that 55 per cent. of all cases occur in infants in the first year; 26 per cent. in children from the second year to puberty, and 19 per cent. in adults. He comments on the extensive use of castor oil and calomel in England and Denmark as a possible explanation of the frequency of intussusception among children in these countries. In Norway this condition is so rare that during the period 1910-1919 the Rikshospital reported only six cases and he has seen it only in four. The main symptoms are sudden pain, vomiting, mucous and bloody stools, and a tumor palpable from the rectum or the exterior. After operation, his four patients immediately received 0.5 liter salt solution subcutaneously; in severe cases he gives this both before and after the intervention. To avoid intoxication and the accompanying rise in temperature, Danish clinicians flush the bowel with a laxative solution. In his patients, intestinal function was resumed in twelve to eighteen hours without enemas. He mentions that Clubbe of Sydney in 1908 reported 157 personally treated cases. One hospital in London has a record of 374 operated cases of intususception, 1898-1917, and Hirschsprung reported from one hospital in Denmark, 107 cases. Two other surgeons have compiled 397 Danish cases in children under 15. In Norway only twenty-nine cases have been published, the first in 1848.

84: 609-696 (July) 1923

*Suprarenal Virilism. A. Collett.—p. 609.
*Intraperitoneal Hemorrhage from Corpus Luteum. Hesselberg.—p. 625.
*Chondromatosis of Skeleton. C. Johannessen.—p. 629.
Two Operative Cases of Spondylolisthesis. S. Widerøe.—p. 640.
Early Roentgen Treatment of Inoperable Cancer. N. Paus.—p. 661.
The Drainage Question After Laparotomies. N. Paus.—p. 664.

Suprarenal Virilism in Infant.—Collett reports presumably the first instance of the suprarenal genital syndrome in a child who survived the removal of the hypernephroma responsible for the virile characteristics. Five other cases in children, from 14 months to 14 years old, have been published, but the children all died at or soon after the operation. Collett's patient was 23 months old, a female pseudohermaphrodite of healthy, overplump aspect, with a heavy hair growth on the genital organs and a deep voice. The suprarenal tumor measured 3.5 by 2.5 cm. The abnormal hair growth had nearly disappeared when recently reexamined, two years later. The voice was still low and the child was nervous and sometimes depressed, but otherwise lively and intelligent.

Intraperitoneal Hemorrhage from Menstrual Rupture of Corpus Luteum.—Hesselberg queries whether such an occurrence is possible, and reports a case in which nothing to suggest pregnancy could be discovered at the laparotomy. The profuse intraperitoneal hemorrhage occurred spontaneously two weeks after the last menses, which had always been regular in the woman, aged 29.

Chondromatosis of Long Bones.—Johannessen adds a case —in a girl, aged 10—to the fifteen or twenty on record of the unilateral disturbance in growth which Ollier described as dyschondroplasia.

84: 697-760 (August) 1923

*Treatment of Scoliosis in Norway. P. E. Giertsen.—p. 697.
*Puncture of the Ventricle. G. H. Monrad-Krohn.—p. 711.
*Dissociation in Facial Paralysis. G. H. Monrad-Krohn.—p. 715.
Elements in Tuberculosis Pathology in Children. Hamburger.—p. 719.
Paroxysmal Hemoglobinuria from Chilling. Bjørn-Hansen.—p. 729.

Treatment of Scoliosis in Norway.—Giertsen remarks that curvature of the spine can be attacked by treating the scoliosis or by treating the child that has the scoliosis. When the curvature is corrected passively, the development of the thorax is interfered with, and the muscular system is weakened. The other system, training the child to hold himself straight, was applied systematically by Kjølstad eighty years ago, and this is the Norwegian method still applied to some extent. Kjølstad's "self straightening" method of walking is combined with the Swedish gymnastic exercises for treatment of scoliosis, and passive correction. Kjølstad taught his patients to concentrate their attention on four points, the heels, the toes, the vertex and the navel. The vertex point had to be directly over the heel point, moving it forward between the two toe points. From the navel, an imaginary weight was suspended, touching the floor, and the child was trained to try to raise this imaginary weight a few inches off the floor by the play of the abdominal muscles. Another exercise was with a broad belt around the hips. The child tried to raise himself by pushing down on a loose extension strap on the belt on each side, always holding his vertex point directly over and between his toe points. In another exercise, the child slowly rose on his toes and slowly dropped back, keeping the vertex point directly over the toe points. The whole system aimed to concentrate the child's attention and will power on holding his body absolutely straight, erect or reclining, and remarkable results were realized. But it is hard nowadays, Giertsen remarks, to find persons capable of applying it properly, and patients capable of such mastery over their will power.

Puncture of the Ventricle and Lumbar Puncture.—Monrad-Krohn compares the findings in the fluid from the ventricle and from lumbar puncture in three cases of spinal obstruction and one of general paralysis. He mentions the American work in this line, and extols the value of puncture of the ventricle in cases of subarachnoid block which otherwise might escape detection. It is such a grave procedure, however, at the best, that he is trying to work out a method of colorimetric differentiation by intraspinal injection of phenolsulphonephthalin. To date it seems quite promising.

Dissociation in Facial Paralysis.—Monrad-Krohn reports some further cases to illustrate that the emotional innervation in facial paralysis may be less affected than the voluntary innervation. This dissociation is not very pronounced in peripheral facial paralysis, but in central facial paralysis the emotional innervation is not only unimpaired but is even exaggerated and more rapid on the side of the paralysis. In a case of postencephalitic parkinsonism there was reversed dissociation, the emotional innervation being decidedly more pathologic than the voluntary.

Casopis lekaruv ceskych, Prague

62: 529-584 (May 19) 1923

*Action of Strychnin on Vasomotor Center. B. Boucek.—p. 531.
Thermic Coefficients of Heart Under Action of Different Substances. V. Freund.—p. 535.
*Action of Diuretics on Metabolism. V. Laufberger.—p. 537.
Reform of the Teaching of Pharmacology and Medicine. K. J. Lhotak. —p. 552.
*Action of Tetrahydro-Beta-Naphthylamin on the Heart and Its Antagonism with Strophanthin. B. Polak.—p. 559.
*Action of Cold on Kidneys. O. Rybak.—p. 564.
Kidney Function Tests in Urologic and Gynecologic Literature in 1922. M. Janu.—p. 566.

Action of Strychnin on Vasomotor Center.—Boucek finds that larger doses of strychnin increase the blood pressure by their action on the vasomotor center. Yet there is a distinct tendency toward a paralyzing effect. The toxic effect and the paralyzing action of strychnin are less pronounced if oxygen is inhaled, while the stimulating action is more marked. Internal doses above 0.005 gm. are not rational.

Action of Diuretics on Metabolism.—Laufberger found no changes in noncoagulable nitrogen and uric acid in blood after intravenous injections of caffein and theobromin derivatives. The creatin, creatinin and calcium content of the plasma were increased.

Action of Tetrahydro-Beta-Naphthylamin on the Heart and Its Antagonism with Strophanthin.—Polak finds that this drug injures in the first line the heart muscle. An incomplete block is a characteristic result of its action. It is due to a lowering of conductivity, and probably also to a decreased irritability of the heart muscle. The heart can recover only in the first stages of poisoning. Epinephrin and atropin enhance, pilocarpin removes the block. The drug is not a complete antagonist of strophanthin, since combination with it makes the block stronger.

Action of Cold on Kidneys.—Rybak's experiments show that even a prolonged application of cold to the renal region does not injure a normal kidney, though the examination of the urine indicated marked vasomotor changes in the kidneys during the experiment.